

EXHIBIT 15

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

GOOGLE LLC,

Plaintiff and Counter-defendant,

v.

SONOS, INC.,

Defendant and Counter-claimant.

Case No. 3:20-cv-06754-WHA

Related to Case No. 3:21-cv-07559-WHA

**REBUTTAL EXPERT REPORT OF
DR. KEVIN C. ALMEROOTH FOR
“PATENT SHOWDOWN”**

SlimServer software and (ii) configure itself to control the audio buffer and playback on the Squeezebox players in the “sync group” in order to cause those Squeezebox players to play back the same music simultaneously. *See, e.g.,* Slim/Buttons/Synchronize.pm:functions():rightline; Slim/Player/Sync.pm:sync(), Sync.pm:unsync(), Sync.pm:saveSyncPrefs(); Slim/Utils/Prefs.pm; Slim/Player/Source.pm; Slim/Server/Squeezebox.pm; Slim/Player/Client.pm; GOOG-SONOS-NDCA-00108095-588 at GOOG-SONOS-NDCA-00108162, GOOG-SONOS-NDCA-00108169-70, GOOG-SONOS-NDCA-00108181.

D. Bose Lifestyle 50 System

215. Dr. Schonfeld relies on an alleged prior art system called the “Bose Lifestyle 50 System,” which Dr. Schonfeld refers to as “Bose Lifestyle” for short. *See* Schonfeld Op. Report at ¶619.

216. In asserting that the Bose Lifestyle 50 System invalidates claim 1 of the of the ’885 Patent, Dr. Schonfeld relies on various disclosures related to different Bose products, some of which have no relation to and are incompatible with the actual Bose Lifestyle 50 System. These various Bose products include:

- Bose Lifestyle 50 System;
- Bose Lifestyle SA-2 and SA-3 Amplifiers and their ability to be added to a Bose link media center of a Bose Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system;
- Bose link communication protocol; and
- Bose FreeSpace EF Series II Business Music System.

Below I provide a summary of each of these Bose products.

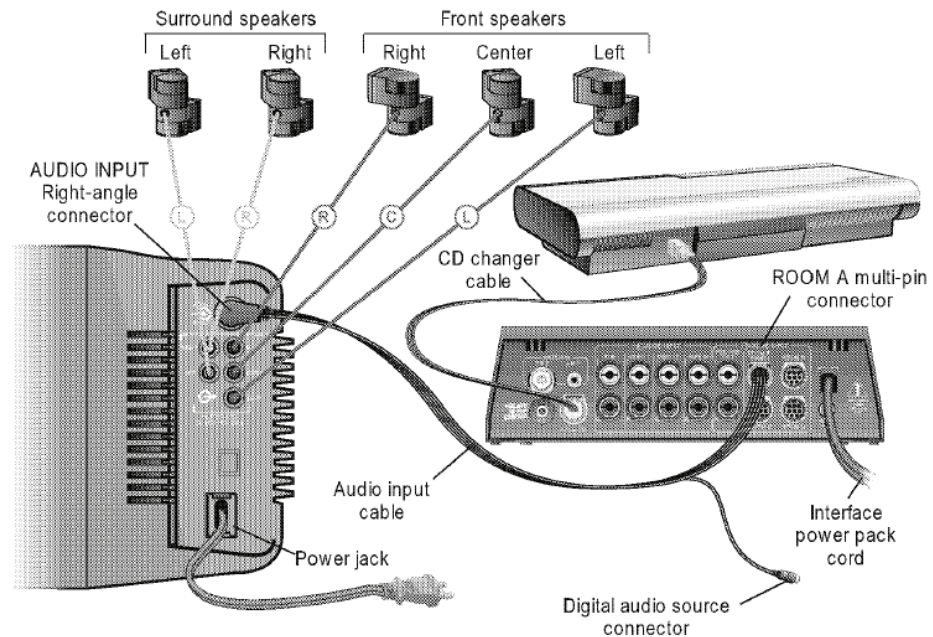
Bose Lifestyle 50 System

217. As described in the “Bose Lifestyle 50 System Owner’s Guide” (referred to herein as “Bose Lifestyle 50 Guide”), dated October 17, 2001, the Bose Lifestyle 50 System includes a “multi-room interface,” one or more “Acoustimass modules” (or other Bose powered speakers) that are each wired to the multi-room interface via respective “audio input cables,” and “Jewel Cube speakers” that are wired to the “Acoustimass module” via “speaker cables.” *See*

BOSE_SUB-0000001-55 at 7, 11-12. An example Bose Lifestyle 50 System configuration with a single Acoustimass module is shown in the figure below:

Figure 8

Speakers, CD changer, and multi-room interface connections



BOSE_SUB-0000001-55 at 12.

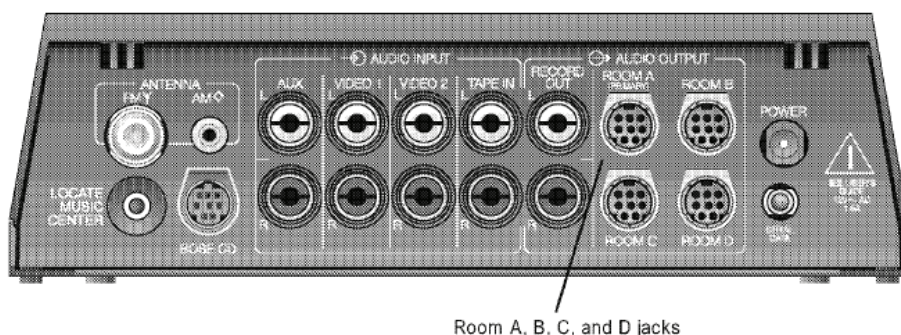
218. The Bose Lifestyle 50 Guide also discloses that the centralized multi-room interface includes various audio inputs to connect various audio sources (e.g., FM, AM, CD, DVD, VCR, etc.). *See, e.g.,* BOSE_SUB-0000001-55 at 14-15; *see also id.* at 10 (“Place the multi-room interface close enough to the sound sources (TV, VCR, DVD, etc.) to allow for cable length.”). In this respect, the “multi-room interface” of the Bose Lifestyle 50 System provides audio sources “locally” or from a “centralized location,” similar to the conventional audio systems disclosed in the Background of the ’885 Patent. *See, e.g.,* ’885 Patent at 1:46-58.

219. The “multi-room interface” also comprises four different audio output connectors labeled ROOM A-D to connect up to four Acoustimass modules in four different rooms. *See, e.g.,* BOSE_SUB-0000001-55 at 42. In this regard, I understand that each connected Acoustimass module can receive its own respective audio signal from a given one of the four audio outputs of the multi-room interface. The Bose Lifestyle 50 Guide also discloses that the connected Acoustimass modules can each play a different audio source or can “share” an audio

source depending on the desired configuration and depending on the number of sources connected to the audio input connectors of the multi-room interface. *Id.* at 43-44. The input and output connectors of the multi-room interface are illustrated in the figure below:

Figure 47

ROOM jacks on the multi-room interface

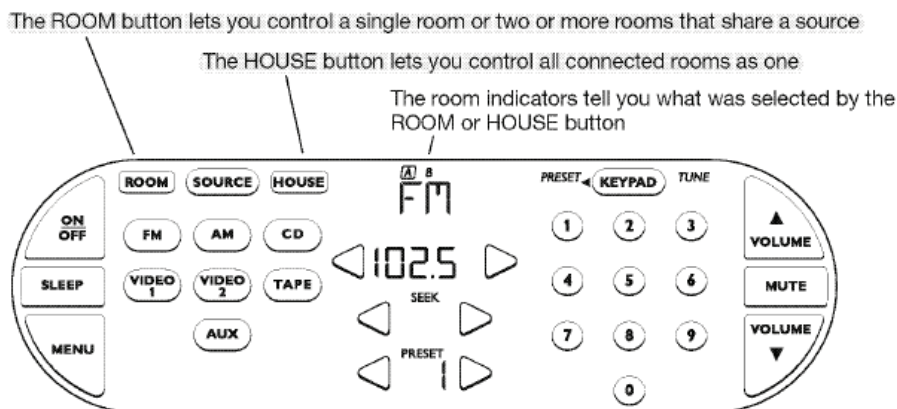


Id. at 42.

220. To help facilitate control of the Bose Lifestyle 50 System, a “Personal music center” is provided. *Id.* at 43. The Personal music center is a portable handheld device with a touch-screen display that provides information about the Bose Lifestyle 50 System and enables a user to select audio sources and control playback of audio sources on Acoustimass modules in one or more rooms. *Id.* at 43-45. Below is a figure of the Personal music center from the Bose Lifestyle 50 Guide:

Figure 48

Example display for a two-room system



Id. at 320.

221. In order to control the Bose Lifestyle 50 System, the Personal music center must “set up a radio frequency link” to establish communications with the centralized multi-room interface. *Id.* at 19, 45. The Personal music center and the “multi-room interface” communicate using a proprietary radio frequency communication protocol that was specifically developed for

1 the Bose Lifestyle 50 System and that is “not compatible” with protocols used in other Bose
2 systems. *See* BOSE_SUB-0000663-683 at 666.

3 222. Notably, there is no disclosure in the Bose Lifestyle 50 Guide or any other
4 evidence I have seen that the Personal music center can communicate with Acoustimass modules
5 and/or Jewel Cube speakers using Bose’s propriety communication protocol or otherwise.
6 Instead, the Personal music center uses Bose’s propriety communication protocol to
7 communicate only with the multi-room interface, which in turn distributes audio to the
8 Acoustimass modules. *See* BOSE_SUB-0000001-55 at 43 (“When batteries are first installed in
9 the [Personal] music center; it sets up a radio-frequency link with the closest multi-room
10 interface.”).

11 223. The Bose Lifestyle 50 Guide also discloses that “[i]f two or more rooms are
12 connected to [the Bose Lifestyle 50 System], the Personal music center displays ROOM and
13 HOUSE buttons, and room indicators (A, B, C, and/or D).” *See* BOSE_SUB-0000001-55 at 43.
14 These ROOM and HOUSE buttons enable a user to configure the multi-room interface to
15 distribute audio from different audio sources to different rooms or to distribute the same audio
16 from the same audio source to multiple rooms at the same time. Specifically, the Bose Lifestyle
17 50 Guide discloses that “[t]he ROOM button allows you to select any connected room and
18 control any sound source you want to hear in that room.” *Id.* at 44. The Bose Lifestyle 50 Guide
19 also provides the following instructions for how to use the ROOM button to set up a “shared
20 source” in multiple rooms:

21 ***Setting up a shared source***

22 Now, let’s say the system is already on and you want to play the FM radio in rooms A and B:

- 23 1. Wake up the Personal music center.
- 24 2. Press the ROOM button until the room indicator **A** is displayed. Press the FM source
25 button and adjust the volume to the desired level for room A.
- 26 3. Press the ROOM button again to select room **B**. Press the FM source button and adjust
27 the volume to the desired level for room B. Now, the indicators **A B** are displayed.
- 28 4. Press the ROOM button again. The indicators **A B** appear on the display indicating that
you can control these two rooms together. Any button command given now (SOURCE,
VOLUME, MUTE, ON/OFF, SLEEP) is applied to both rooms.

1 *Id.*

2 224. The Bose Lifestyle 50 Guide discloses that the HOUSE button enables a user to
3 “link all rooms together and control them as one,” such that “[a]ny button pressed after that (any
4 source button, VOLUME, MUTE, or SLEEP) affects every room.”

5 ***Using the HOUSE button***

6 Using the HOUSE button, you can link all rooms together and control them as one. When you
7 press the HOUSE button, an empty box indicator is displayed for each connected room. Any
8 button pressed after that (any source button, VOLUME, MUTE, or SLEEP) affects every room.
When you are done listening you can press OFF to turn off the entire system.

9 **Note:** *If you do not press any additional buttons after pressing HOUSE, pressing HOUSE
again cancels HOUSE mode.*

10 *Id.* at 45. In this way, a user can use the HOUSE button followed by a source button to set up a
11 shared source for all rooms A-D in their home.

12 225. Notably, neither the Bose Lifestyle 50 Guide nor any of the other evidence I have
13 reviewed discloses anything about what specific information is transmitted from the Personal
14 music center to the multi-room interface as a result of “link[ing]” rooms together and setting up a
15 “shared source.” However, based on the evidence I have reviewed, it appears that no
16 information would be sent from the Personal music center to the multi-room interface until at
17 least the user selects the source at which point the Personal music center would send information
18 to the multi-room interface to cause the multi-room interface to configure itself to distribute
19 audio from the selected audio source to the selected room(s). *See, e.g.* BOSE_SUB-0000001-55
20 at 6 (“The Bose multi-room interface, with four independent audio outputs that allow you to
21 enjoy Bose sound throughout your home.”), 12 (illustrating a Bose Lifestyle 50 System
22 configuration with a CD player and an Acoustimass module connected the multi-room interface),
23 17 (illustrating various audio sources connected to multi-room interface via audio input cables),
24 19 (“When batteries are first installed in the music center; it sets up a radio-frequency link with
25 the closest multi-room interface.”), 44-45 (explaining how to use ROOM and HOUSE buttons to
26 set up an audio source for one or more rooms).

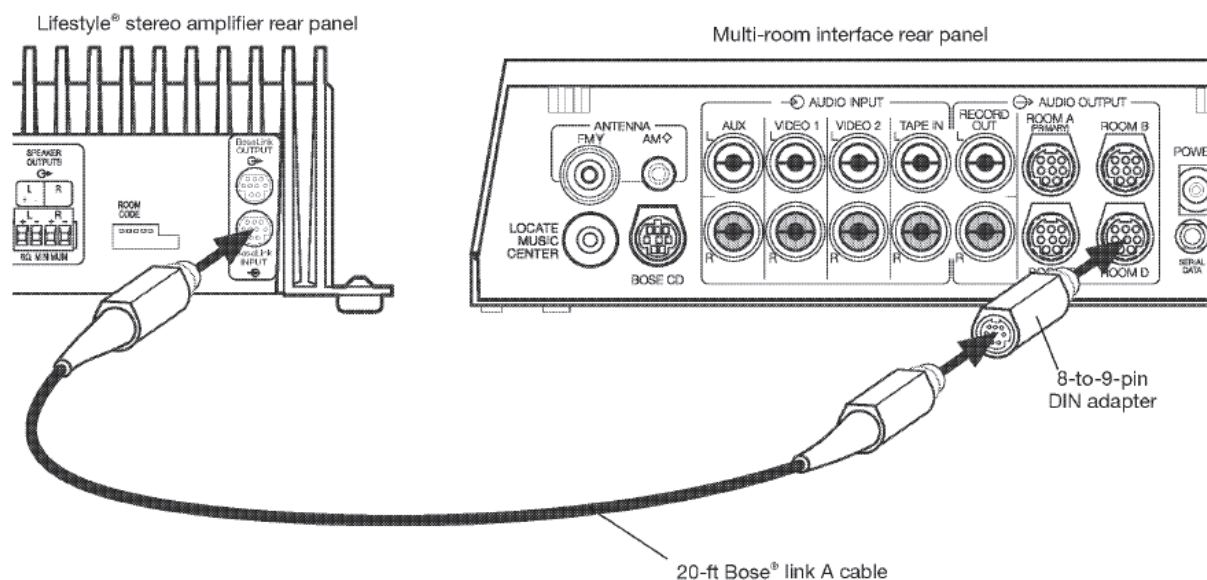
27 226. Based on my review of the Bose Lifestyle 50 Guide, it is my opinion that the
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Bose Lifestyle 50 System is a type of conventional audio system with a centralized multi-room interface that is hard-wired to one or more Acoustimass modules so that audio could be distributed from the centralized multi-room interface to the “Acoustimass module(s).” See BOSE_SUB-0000001-55 at 11-12. A POSITA would not consider the multi-room interface and the Acoustimass modules to be operating on a data network because the hard-wired connection described in the Bose Lifestyle 50 Guide is not a medium that interconnects devices, enabling them to send digital data packets to and receive digital data packets from each other. In contrast, the ’885 Patent is specifically directed to *networked* multimedia systems that operate on local and wide area *data networks*, which are distinctly different from conventional multimedia systems such as the Bose Lifestyle 50 System. Compare ’885 Patent at 4:39-5:15, Fig. 1 with 1:46-2:16.

Bose Lifestyle SA-2 and SA-3 Stereo Amplifiers

227. As described in “The Bose Lifestyle SA-2 and SA-3 Stereo Amplifier Owner’s Guide” (“SA-2 and SA-3 Owner’s Guide”), dated 2004, the Bose SA-2 and SA-3 stereo amplifiers can be used with certain Bose Lifestyle systems to “expand” such systems by adding non-powered speakers that can be connected to the SA-2 and SA-3 amplifiers via speaker wire. See BOSE_SUB-0000361-448 at 366-369, 376.

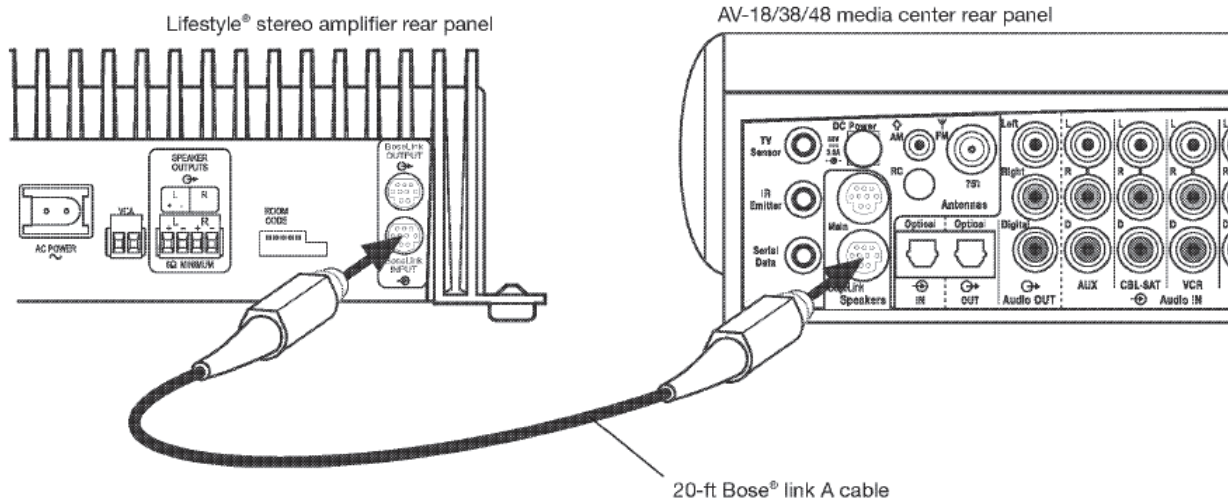
228. Although the Bose Lifestyle 50 System is not expressly referenced in the SA-2



1 and SA-3 Owner's Guide, it does appear that SA-2 and SA-3 amplifiers can be connected to the
2 multi-room interface of a Bose Lifestyle 50 System, as shown in the following image:

3
4 See BOSE_SUB-0000361-448 at 376. However, as shown, unlike an SA-2 or SA-3 amplifier,
5 the multi-room interface of the Bose Lifestyle 50 System does not have a "Bose link" connector
6 so an "8-to-9-pin DIN adapter must be used in order to connect an SA-2 or SA-3 amplifier to the
7 Bose Lifestyle 50 System using the "Bose link A cable" that comes with the SA-2 or SA-3
8 amplifier. In this regard, an SA-2 or SA-3 amplifier could be connected to the audio output
9 connector for ROOM B, C, or D. *Id.* ("Insert the 8-to-9-pin adapter into one of the unused
10 ROOM output connectors (B, C, or D) on the rear of the multi-room interface...."). Thereafter, I
11 understand that the Personal music center could be used to control the SA-2 or SA-3 amplifier
12 via multi-room interface, as I explained above in connection with the Bose Lifestyle 50 System.
13 *Id.* at 377. As one exemplary configuration, an Acoustimass module could be connected to the
14 ROOM A output connector while an SA-2 or SA-3 amplifier could be connected to each of the
15 ROOM B-D output connectors. In this arrangement, the SA-2/SA-3 amplifiers would operate in
16 the Bose Lifestyle 50 system as if they were another Acoustimass module.

17 229. Alternatively, the SA-2 and SA-3 amplifiers can be connected to other newer
18 Bose Lifestyle systems that do have a Bose link connector and in such a configuration no adapter
19 is needed, as shown below:
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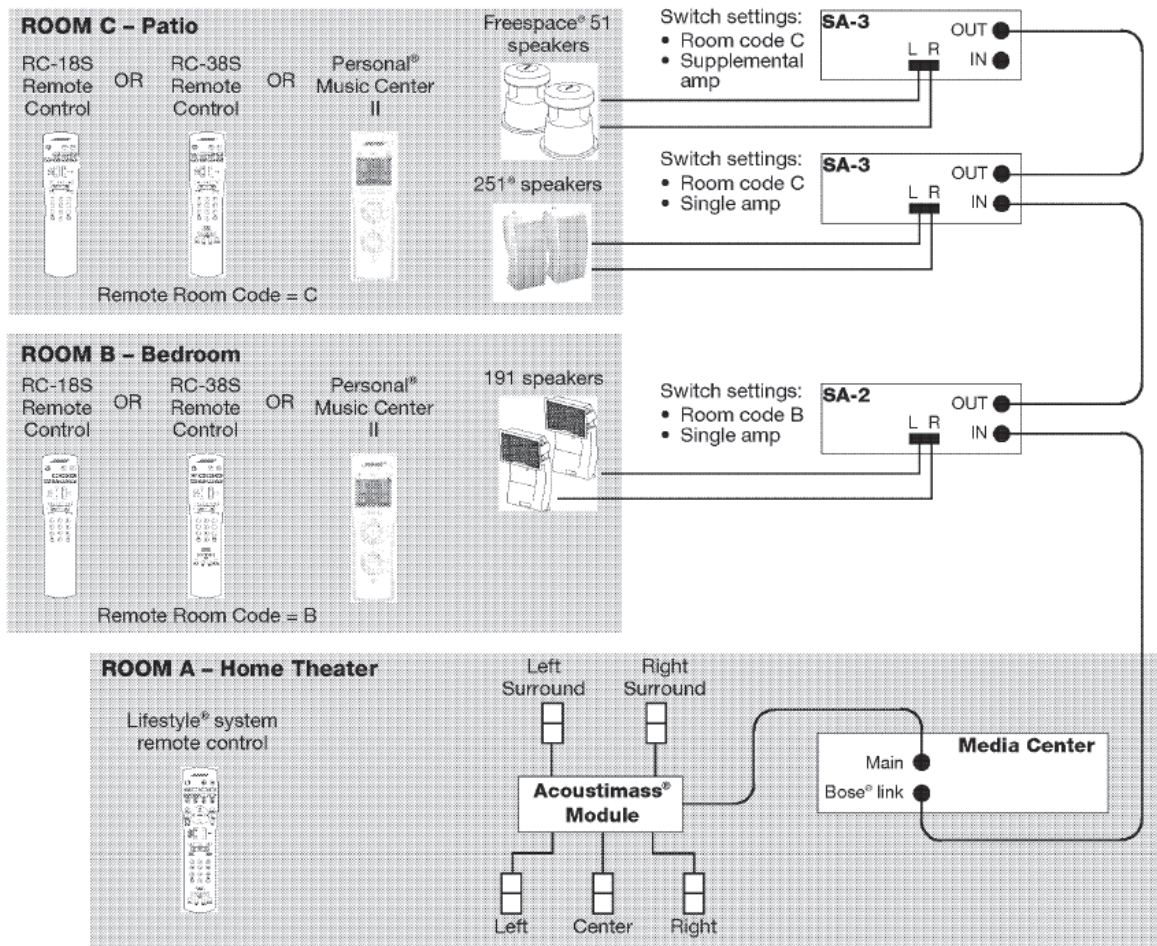
Id. at 372.

230. For these newer Bose Lifestyle systems, I understand that there is only a single Bose link connector on the centralized Bose link enabled media center and thus only a single SA-2 or SA-3 amplifier can be connected directly to the centralized media center for the Bose Lifestyle system. *Id.* Moreover, in such a configuration, “[f]or the Lifestyle® stereo amplifier to work properly with your home entertainment system, the expansion protocol menu item must be set to Bose® link.” *Id.* at 373.

231. As explained in the “Setup guidelines for additional rooms” section of the SA-2 and SA-3 Owner’s Guide, if a user wishes to install one or more additional SA-2 or SA-3 amplifiers in other rooms of their home, this can be done through a series of Bose link connections, as shown below:

Figure 18

Sample installation of
Lifestyle® stereo amplifiers



Id. at 384.

232. Notably, the “Setup guidelines for additional rooms” section of the SA-2 and SA-3 Owner’s Guide states that it only applies to “a Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system” – not a Bose Lifestyle 50 System. *Id.* Additionally, the only compatible controllers shown for these “additional rooms” are the RC-18S, RC-38S, and Personal Music Center II – not the Personal music center that comes with the Bose Lifestyle 50 System. Moreover, in such a configuration with “additional rooms,” a separate remote must be dedicated to each room, which is done by setting the room switches on the remote control and the room switches on the SA-2 or SA-3 amplifier to match each other. *Id.* at 384-386 (“Remote

controls for other rooms must be set to the same house code as the main room remote, but each remote must be set to a different room code. ... The Lifestyle® amplifier and its remote control must be set to the same room code.”). In this regard, it is my understanding that, unlike the Personal music center of the Bose Lifestyle 50 System, which allowed for the control of multiple rooms connected to the multi-room interface, the dedicated remote controls used with a Bose link configuration of “a Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system” could only control a single room at a time.

Bose Link Communication Protocol

233. As described in the undated, internal Bose document titled “Understanding Bose link,” “Bose link is a communication protocol” and “[t]o communicate there must be at least two participants that speak the same language.” BOSE_SUB-0000594-601 at 595. As also explained: “For a Bose link setup to work the system must include a Bose link enabled media center (a controller), a Bose link expansion product, and an expansion remote control. Both the expansion product and the remote must be configured to operate on the same room.” *Id.* It is my understanding that Bose’s SA-2 and SA-3 amplifiers are Bose link expansion products. *Id.* at 601; BOSE_SUB-0000361-448 at 376. However, an SA-2 or SA-3 amplifier would only use the Bose link communication protocol if it was connected to a Bose link enabled media center and controlled by an expansion remote control.

234. As also explained in the “Understanding Bose link” document, the Bose link communication protocol is only used to transmit certain types of information between Bose link enabled devices:

235. A Bose link connection is essentially a conversation between the media center and the expansion device. The media center sends on/off, volume and source change commands along with audio to the expansion product. The expansion product responds by sending information back to the media center to let it know that it is still on (or off) and in the same room. This information exchange occurs each time a power or source change command is issued by the expansion remote.

236. When the media center receives an ON command from an expansion remote the

1 system turns on and checks for any Bose link products that might be connected, but it will only
2 look for Bose link products that are assigned to the same room as the remote.

3 237. If the media center receives a command from a remote configured for room B, for
4 example, the media center calls out to other Bose link products which might be assigned to room
5 B. If a connected expansion product is assigned to room B it will respond to the media center and
6 a Bose link connection will be made. The media center will not acknowledge a response from
7 anything not assigned to room B.

8 238. The media center will not acknowledge more than one response from the same
9 room, either. As with any productive conversation, there can only be one person speaking at a
10 time. If more than one product is assigned to room B the media center won't know which one to
11 listen to. If the media center can't understand the response from the expansion products, or if
12 there is no response at all, the media center will turn itself off and the Bose link connection will
13 not be successful.

14 239. BOSE_SUB-0000594-601 at 595-596. In this regard, I understand that if a user
15 wanted to turn on multiple Bose link expansion products in different rooms of their home using
16 the Bose link communication protocol, the user would have to press the power on button on a
17 dedicated expansion remote control for each room, which would then cause the Bose link
18 enabled media center to check for a Bose link enabled expansion product assigned to that room
19 and, if one is found, a Bose link connection would be made. I have not seen any evidence that
20 the Bose link communication protocol can be used to turn on multiple Bose link expansion
21 products in different rooms via a single remote control.

22 240. Notably, there is no disclosure in the "Understanding Bose link" of a Bose
23 expansion remote control transmitting information directly to a Bose link enabled expansion
24 product. Instead, based on the materials I have reviewed, a Bose expansion remote control
25 transmits information to a Bose link enabled media center, which in turn transmits information to
26 a Bose link enabled expansion product.

27 241. The "Understanding Bose link" document also explains how "A Bose link
28 enabled media center is also capable of managing two separate sources at the same time" using

1 two different audio streams, namely, stream 1 and stream 2. *Id.* at 597. While “[t]he main room,
2 or room A, can only operate on stream 1,” “any of the expansion rooms can be configured to
3 operate on either stream 1 or stream 2.” *Id.* The following example is also provided:

4 242. If an expansion remote configured for stream 1 sends an ON command to the
5 media center, the media center will activate the pins that carry stream 1 information. The media
6 center will also call out to any Bose link product set to the same room code as the remote. If the
7 media center gets an answer it can understand, it will respond by telling the expansion product to
8 turn on and listen to its stream 1 inputs. If the media center does not get a response from an
9 expansion product set to the same room as the remote it will simply turn itself off. *Id.* In this
10 regard, I understand that the stream for each Bose link enabled expansion product is set at the
11 dedicated expansion remote control for the room in which that expansion product is located.
12 Accordingly, if a user wanted to listen to stream 1 in Room B, the user could set the dedicated
13 Room B expansion remote to stream 1 and then use that dedicated Room B expansion remote to
14 turn on the Bose link enabled expansion product in Room B and thereafter control playback of
15 stream 1 on the Bose link enabled expansion product in Room B. To listen to that same stream 1
16 in a different room, such as Room C, the user could set the dedicated Room C expansion remote
17 to stream 1 and then use that dedicated Room C expansion remote to turn on the Bose link
18 enabled expansion product in Room B and thereafter control playback of stream 1 on the Bose
19 link enabled expansion product in Room C.

20 243. Based on the materials I reviewed, it is my opinion that the Bose link
21 communication protocol was not utilized by the Bose Lifestyle 50 System, including the multi-
22 room interface and the Personal media center. My opinion is supported by the fact that the Bose
23 Lifestyle 50 Guide is dated October 17, 2001 while the first reference I have seen to the Bose
24 link communication protocol is in the 2004 SA-2 and SA-3 Owner’s Guide. *See* BOSE_SUB-
25 0000361-448 at 368. In other words, the Bose link communication protocol appears to have
26 been developed years after the Bose Lifestyle 50 System. Additionally, the “Understanding
27 Bose link” document does not reference the Bose Lifestyle 50 System and vice versa.

28 244. My opinion that the Bose link communication protocol was not utilized by the

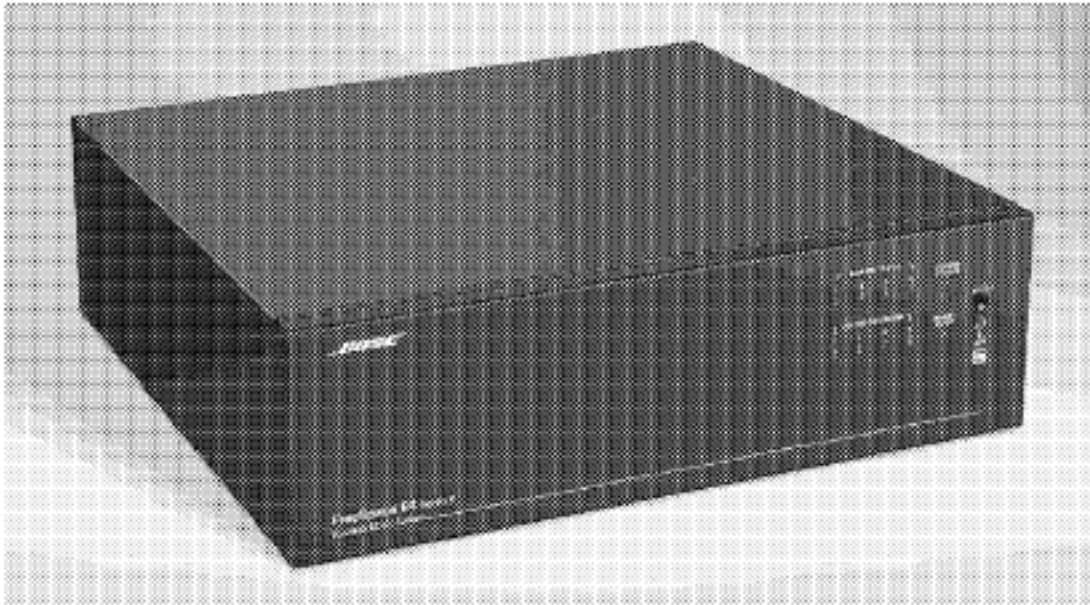
Bose Lifestyle 50 System is also supported by the fact that the “Setup guidelines for additional rooms” section of the SA-2 and SA-3 Owner’s Guide describes how to use the Bose link technology to add up to 14 rooms to a Bose Lifestyle system, but the only Bose Lifestyle systems that are listed are the “Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system[s]” – not a Bose Lifestyle 50 System. *See* BOSE_SUB-0000361-448 at 384; *see also* BOSE_SUB-0000594-601 at 595 (explaining how the Bose link technology allows the addition of 14 rooms “B-O” using “Bose link expansion product[s]”). Additionally, the only compatible expansion remote controls shown for these “additional rooms” are the RC-18S, RC-38S, and Personal Music Center II – not the Personal music center that comes with the Bose Lifestyle 50 System. This makes sense because, unlike the Bose Lifestyle 50 System, which appears to have been developed in 2001 and discontinued in 2003 (*see* BOSE_SUB-0000001-55; SONOS-SVG2-00226910 (https://www.bose.com/en_us/support/products/bose_home_theater_support/bose_5_speaker_home_theater_support/ls50.html))), the “Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system[s]” appear to have all been developed in 2004 around the time that the Bose link communication protocol appears to have been developed (*see* SONOS-SVG2-00226906 (https://www.bose.com/en_us/support/products/bose_home_theater_support/bose_5_speaker_home_theater_support/ls18_series2.html)); SONOS-SVG2-00226907 (https://www.bose.com/en_us/support/products/bose_home_theater_support/bose_5_speaker_home_theater_support/ls28_series2.html); SONOS-SVG2-00226908 (https://www.bose.com/en_us/support/products/bose_home_theater_support/bose_5_speaker_home_theater_support/ls38_series1.html); SONOS-SVG2-00226909 (https://www.bose.com/en_us/support/products/bose_home_theater_support/bose_5_speaker_home_theater_support/ls48_series1.html)).

245. My opinion that the Bose link communication protocol was not utilized by the Bose Lifestyle 50 System is further supported by the fact that the multi-room interface of the Bose Lifestyle 50 System does not have a Bose link connector and thus a special “8-to-9-pin

1 DIN adapter” must be used to connect a Bose link expansion product like an SA-2 or SA-3
2 amplifier to the multi-room interface of the Bose Lifestyle 50 System using a Bose link cable. In
3 my opinion, when the “8-to-9-pin DIN adapter” is used to connect an SA-2 or SA-3 amplifier to
4 the multi-room interface the SA-2 or SA-3 amplifier would not be able to communicate with the
5 multi-room interface using the Bose link communication protocol. Instead, the SA-2 or SA-3
6 amplifier would operate like the Acoustimass module of the Bose Lifestyle 50 System. Notably,
7 I have not seen any evidence that the multi-room interface of the Bose Lifestyle 50 System could
8 be updated to operate in accordance the Bose link communication protocol.

9 Bose FreeSpace E4 Series II Business Music System

10 246. According to the “Bose FreeSpace E4 Series II Business Music System Owner’s
11 Guide” (“Bose Freespace Owner’s Guide”) dated July 10, 2004, Bose FreeSpace “is an
12 integrated four channel digital signal processor and 400-watt power amplifier for 70/1 DOV
13 business music applications” that “provides all of the processing and control features required for
14 one-to-four zone business music applications” in a “single chassis.” BOSE_SUB-0000062-136
15 at 74. The Bose FreeSpace “allow[s] for an input source to be routed to any of the four amplifier
16 outputs,” which allows for audio distribution for up to four different zones. *Id.* As shown and
17 described in the Owner’s Guide, “[s]peaker systems in up to four zones can be connected to the
18 ZONE OUT amplifier outputs” using “the speaker cable from each zone.” *Id.* at 93. A picture
19 of the Bose FreeSpace E4 product is shown below:
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Id. at 74.

247. Based on this disclosure, it is my opinion that a system comprising the Bose FreeSpace product connected to different passive speakers systems in different zones via speaker cable is a conventional centralized, hard-wired audio system such as that described in the Background section of the '885 Patent, where audio from audio sources connected to the centralized Bose FreeSpace product is distributed to connected speaker systems. *See* '885 Patent at 1:46-2:16. A POSITA would not consider the centralized Bose FreeSpace product and connected speaker systems to be operating on a data network because the hard-wired connection described in the Bose FreeSpace Owner's Guide is not a medium that interconnects devices, enabling them to send digital data packets to and receive digital data packets from each other. Moreover, as explained below, passive speakers like the ones utilized with the centralized Bose FreeSpace product are not "zone players," as required by claim 1 of the '885 Patent, because they are not data network devices and are not configured to process and output audio.

248. Given that there are no "zone players" in a Bose FreeSpace system, there can be no "zone scenes." Not surprisingly, Dr. Schonfeld does not cite to the Bose FreeSpace system for any of his invalidity analysis other than the processor and network interface limitations.

249. The Bose FreeSpace Owner's Guide also explains that a user can use the "Set Up

Schedule mode” on the “FreeSpace Installer Software” to “automate a system by creating up to 64 events.” *See* BOSE_SUB-0000062-136 at 101. Events can be set up for each of the four individual zones on the Bose FreeSpace product and can include events such as “On/Off, Mute, Volume, Source, and Audio Volume.” *Id.* Such events “are only saved to the E4 unit” itself and there is no disclosure that information about the events is transmitted to any other device such as a speaker system in a zone to which the event pertains. In other words, events are merely set up on the Bose FreeSpace product and not communicated with any other device, and then audio is distributed from the centralized Bose FreeSpace product to connected speaker systems in accordance with the events. Moreover, there is no disclosure of anything other than audio being transmitted from the centralized Bose FreeSpace product to the connected speaker systems.

250. Notably, there is no disclosure in the Bose Freespace Owner’s Guide or any of the other Bose FreeSpace materials cited by Dr. Schonfeld teaching or suggesting that the Bose FreeSpace system is related to or somehow compatible with the Bose Lifestyle 50 System. To the contrary, based on the materials I have reviewed, it is my opinion that the Bose FreeSpace product and the Bose Lifestyle 50 System are not related or compatible. Instead, the systems are alternatives for distributing audio from a central location to one or more rooms or zones via an audio cable, albeit with very different capabilities.

E. Millington

251. I understand that Millington was published on February 10, 2005. Dr. Schonfeld provides a brief overview of Millington in his report. *See* Schonfeld Op. Report at ¶¶ 164-169.

252. At a high-level, Millington discloses a “network audio system” that includes “zone players,” which are data network devices that are configured to process and output audio. Millington at 3b, FIGs. 1-3. According to Millington, each of these “zone players” is capable of operating in a standalone mode in which the “zone player” is configured for individual audio playback, and each of these “zone players” is also capable of being added to a “synchrony group” comprising a set of “zone players” that are configured to “play the same audio program synchronously” by coordinating with one another over a data network. *Id.* at 6-11; *see also id.* at 13-48.

1 Rajapakse, or Lindemann.

2 745. Further, I note that Dr. Schonfeld appears to have only performed his obviousness
3 analysis for claim 1 of the '885 Patent on a limitation-by-limitation basis, and has not performed
4 any analysis or offered any opinions as to whether claim 1 of the '885 Patent as a whole would
5 have been obviousness, which I understand to be improper.

6 746. Further yet, I note that Dr. Schonfeld has only offered obviousness opinions with
7 respect to Squeezebox as combined with one other reference, and has not performed any analysis
8 or offered any opinions as to whether a POSITA in 2005-06 would have been motivated to
9 modify and combine Squeezebox with multiple different references.

10 747. Accordingly, for all of the reasons explained above, it is my opinion that claim 1
11 of the '885 Patent is not rendered obvious by Squeezebox either alone or in combination with
12 any one of Sonos Forums, Millington, Nourse, Rajapakse, or Lindemann.

13 **C. Bose Lifestyle 50 System**

14 748. Although unclear, in his Opening Report, Dr. Schonfeld appears to opine that claim
15 1 of the '885 patent is rendered obvious by the Bose Lifestyle 50 System alone or in combination
16 with one of Nourse, Rajapakse, or Millington.¹⁷ I disagree.

17 749. As an initial matter, it is my opinion that the Bose Lifestyle 50 System, as described
18 by Dr. Schonfeld, does not qualify as prior art.

19 750. It is also my opinion that the Bose Lifestyle 50 System fails to disclose at least the
20 following limitations of claim 1 of the '885 Patent:

- 21 • A “zone scene” comprising a “predefined grouping of zone players . . . that are to
22 be configured for synchronous playback of media when the . . . zone scene is
invoked”;
- 23 • [1.0] “A first zone player comprising:”;
- 24 • [1.1] “a network interface that is configured to communicatively couple the first
25 zone player to at least one data network”;

26
27 ¹⁷ Dr. Schonfeld also makes reference to a combination of the Bose Lifestyle 50 System with Sonos Forums
28 (see Schonfeld Op. Report at ¶¶6, 621) but does not provide any such analysis of this combination (*id.* at
¶¶622-701). As such, I do not address that combination herein.

- 1 • [1.2] “one or more processors”;
- 2 • [1.3] “a non-transitory computer-readable medium”;
- 3 • [1.4] “program instructions stored on the non-transitory computer-readable
- 4 medium that, when executed by the one or more processors, cause the first zone
- 5 player to perform functions comprising”;
- 6 • [1.5] / [1.6] “while operating in a standalone mode in which the first zone player
- 7 is configured to play back media individually in a networked media playback
- 8 system comprising the first zone player and at least two other zone players,” “(i)
- 9 receiving, from a network device over a data network, a first indication that the first
- 10 zone player has been added to a first zone scene comprising a first predefined
- 11 grouping of zone players including at least the first zone player and a second zone
- 12 player that are to be configured for synchronous playback of media when the first
- 13 zone scene is invoked”;
- 14 • [1.5] / [1.7] “while operating in a standalone mode in which the first zone player
- 15 is configured to play back media individually in a networked media playback
- 16 system comprising the first zone player and at least two other zone players,” “(ii)
- 17 receiving, from the network device over the data network, a second indication that
- 18 the first zone player has been added to a second zone scene comprising a second
- 19 predefined grouping of zone players including at least the first zone player and a
- 20 third zone player that are to be configured for synchronous playback of media when
- 21 the second zone scene is invoked, wherein the second zone player is different than
- 22 the third zone player”;
- 23 • [1.8] “after receiving the first and second indications, continuing to operate in the
- 24 standalone mode until a given one of the first and second zone scenes has been
- 25 selected for invocation”;
- 26 • [1.9] “after the given one of the first and second zone scenes has been selected
- 27 for invocation, receiving, from the network device over the data network, an
- 28 instruction to operate in accordance with a given one of the first and second zone
- scenes respectively comprising a given one of the first and second predefined
- groupings of zone players”; and
- [1.10] “based on the instruction, transitioning from operating in the standalone
- mode to operating in accordance with the given one of the first and second
- predefined groupings of zone players such that the first zone player is configured
- to coordinate with at least one other zone player in the given one of the first and
- second predefined groupings of zone players over a data network in order to output
- media in synchrony with output of media by the at least one other zone player in
- the given one of the first and second predefined groupings of zone players.”

751. Additionally, it is my opinion that these limitations that are missing from the Bose Lifestyle 50 System also would not have been obvious based either on the Bose Lifestyle 50

1 System alone or on the Bose Lifestyle 50 System in combination with one of Nourse, Rajapakse,
2 or Millington. This opinion is based in part on the fact that I have not seen any evidence showing
3 an apparent reason why a POSITA in 2005-06 would have been motivated to modify the Bose
4 Lifestyle 50 System and/or combine it with another reference in the various different ways
5 proposed by Dr. Schonfeld in order achieve the claimed invention of the '885 Patent. I have also
6 seen other objective, real-world evidence demonstrating that a POSITA in 2005-06 would not have
7 found claim 1 of the '885 Patent to have been obvious, which stands in stark contrast to Dr.
8 Schonfeld's failure to support his obviousness opinions with any objective evidence.

9 752. My opinions regarding the Bose Lifestyle 50 System are supported by the fact that
10 the Bose Lifestyle 50 System as well as all the secondary references that Dr. Schonfeld has relied
11 upon were considered by U.S. Patent Office during prosecution of the '885 Patent, which was then
12 allowed to issue over these references. In particular:

- 13 • With respect to the Bose Lifestyle 50 System, the "The Bose Lifestyle 50 System.
14 Owner's Guide, Oct. 17, 2001, 55 pages" was considered during prosecution of the
15 '885 Patent (*see* '885 Patent at p. 26), as was the "Bose Lifestyle SA-2 and SA-3 Stereo
Amplifier Owner's Guide, 2004, 32 pages";
- 16 • The Rajapakse patent as well as its prior publication were considered during
17 prosecution of the '885 Patent (*see* '885 Patent at p. 5, 8);
- 18 • Several U.S. counterparts to the Millington Canadian patent relied upon by Dr.
19 Schonfeld were considered during prosecution of the '885 Patent, including U.S. Pat.
No. 8,234,395 (*see* '885 Patent at p. 5); and
- 20 • The Nourse patent as well as its prior publication were considered during prosecution
21 of the '885 Patent (*see* '885 Patent at p. 4, 7).

22 753. Further, with respect to the Bose Lifestyle 50 System, during prosecution of the
23 '885 Patent, the Examiner stated in his Reasons for Allowance that "Bose does not allow dynamic
24 additions and subtractions such as the synchronous addition of a particular third media player and
25 removal of a second media player in substantially real time by the selection of an appropriately
26 configured scene, nor does Bose enable scene-wise storage of such diverse groupings of media
27 players." *See* August 19, 2020 Notice of Allowance. Likewise, in his Examiner-Initiated
28 Interview Summary that issued on the same day as the Notice of Allowance, the Examiner stated

1 that he and Sonos “[d]iscussed the manner in which the instant claims feature beyond the Bose
2 [Lifesytle 50 System] reference in as much as Bose does not discuss the claims selectively dynamic
3 groupings of media players.” *See* August 19, 2020 Examiner-Initiated Interview Summary
4 (regarding a July 31, 2020 interview).

5 754. Given that these references were considered by the USPTO during prosecution of
6 the ’885 Patent, and the USPTO allowed the ’885 Patent (including claim 1) to issue over these
7 references, I understand that Dr. Schonfeld has the added burden of overcoming the deference that
8 is due to a qualified government agency, such as the USPTO, that is presumed to have properly
9 done its job based on its expertise in interpreting references, its understanding of the level of
10 ordinary skill in the art, and its duty to issue only valid patents. However, it is my opinion that
11 Dr. Schonfeld failed to satisfy this added burden.

12 755. In the sub-sections below, I have provided a summary of the bases for my opinions,
13 as well as responses to Dr. Schonfeld’s opinions.

14 **1. Dr. Schonfeld’s “Bose Lifestyle” System Does Not Qualify as Prior Art**

15 756. Dr. Schonfeld relies on an alleged prior art system called the “Bose Lifestyle 50
16 System,” which Dr. Schonfeld refers to as “Bose Lifestyle” for short. *See* Schonfeld Op. Report
17 at ¶619. Although unclear, Dr. Schonfeld appears to be assertion that the Bose Lifestyle 50 System
18 is system prior art that “was publicly available, on sale, offered for sale, and described in printed
19 publications both before the critical date (i.e., prior to September 12, 2005), before the alleged
20 conception date (i.e., prior to December 21, 2005), and prior to the patent filing date on September
21 12, 2006.” *Id.* Despite appearing to rely on the Bose Lifestyle 50 System as system prior art, Dr.
22 Schonfeld does not provide any analysis or testing of an actual Bose Lifestyle 50 System.

23 757. As noted above, in asserting that the Bose Lifestyle 50 System invalidates claim 1
24 of the of the ’885 Patent, Dr. Schonfeld relies on various disclosures related to different Bose
25 products, some of which have no relation to and are incompatible with the Bose Lifestyle 50
26 System. These various Bose products include:

- 27 • Bose Lifestyle 50 System;
- 28 • Bose Lifestyle SA-2 and SA-3 Amplifiers and their ability to be added to a Bose link

media center of a Bose Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system;

- Bose link communication protocol; and
- Bose FreeSpace EF Series II Business Music System.

758. For the reasons explained below, it is my opinion that Dr. Schonfeld's alleged Bose Lifestyle 50 System does not qualify as prior art.

759. As an initial matter, Dr. Schonfeld has not even alleged, let alone explained how or why, these different Bose products would be combined into a single system and/or that such a combination was contemplated or actually made at a date prior to the December 21, 2005 invention date and/or the September 12, 2006 priority date of the '885 Patent. For this reason alone, Dr. Schonfeld's "Bose Lifestyle" does not qualify as prior.

760. One of the primary documents upon which Dr. Schonfeld relies to support his opinions – and the only document specifically directed to the Bose Lifestyle 50 System – is the "Bose Lifestyle 50 System Owner's Guide" (referred to herein as "Bose Lifestyle 50 Guide"), which bears a date of October 17, 2001. *See* BOSE_SUB-0000001-55 at 1. While Dr. Schonfeld characterizes the October 17, 2001 date as a "publication date," Dr. Schonfeld has not established that the Bose Lifestyle 50 Guide was publicly available on that date or any date prior to the December 21, 2005 invention date and/or September 12, 2006 priority date of the '885 Patent. Dr. Schonfeld also has not established that the disclosures in the Bose Lifestyle 50 Guide were embodied in a system that was publicly available in the United States at a time that would qualify the system as prior art.

761. Dr. Schonfeld also appears to assert that the Bose Lifestyle 50 System itself was "publicly available at least as of 2003." *See* Schonfeld Op. Report at ¶154. Dr. Schonfeld cites to two different websites to support this assertion. The first is the Bose website, which states that the Bose Lifestyle 50 System was "[s]old from 1970-2003." SONOS-SVG2-00226910 (https://www.bose.com/en_us/support/products/bose_home_theater_support/bose_5_speaker_home_theater_support/ls50.html). However, this website does not indicate whether the Bose Lifestyle 50 System was "publicly available" in the United States at least as of 2003. At best, this

1 website suggests that wherever the Bose Lifestyle 50 System was available, it was discontinued in
2 2003. I also note that the information on this webpage does not appear to be accurate as I have
3 seen no evidence that the Bose Lifestyle 50 System was sold as far back as 1970. To the contrary,
4 the Bose Lifestyle 50 Guide references a CD player and it is my understanding that the first CD
5 player was not commercially released until 1982. See SONOS-SVG2-00226948
6 (https://en.wikipedia.org/wiki/Sony_CDP-101). Similarly, the third party “audio review” website
7 cited by Dr. Schonfeld also does not establish that the Bose Lifestyle 50 System was “publicly
8 available” in the United States at least as of 2003. To the contrary, two of the 2002-2003 reviews
9 reference foreign currency suggesting that the reviews apply to systems that may have been
10 publicly available outside of the United States. *Id.*
11 <http://www.audioreview.com/product/other/mini-systems/bose/lifestyle-50.html>.

12 762. Confusingly, in describing the Bose Lifestyle 50 System, Dr. Schonfeld also relies
13 on disclosure in various materials related to other Bose products, namely, Bose Lifestyle SA-2 and
14 SA-3 Amplifiers and their ability to be added to a Bose link media center of a Bose Lifestyle® 18
15 series II, 28 series II, 38 or 48 home entertainment system; Bose link communication protocol; and
16 Bose FreeSpace EF Series II Business Music System. Dr. Schonfeld has not explained how such
17 disclosure is relevant to the operation of the actual Bose Lifestyle 50 System upon which he claims
18 to rely for invalidity. Moreover, Dr. Schonfeld has not even alleged, let alone explained how or
19 why, these different Bose products would be combined with the Bose Lifestyle 50 System and/or
20 that such a combination was contemplated or actually made at a date prior to the December 21,
21 2005 invention date and/or the September 12, 2006 priority date of the '885 Patent.

22 763. For example, in describing the Bose Lifestyle 50 System, Dr. Schonfeld relies on
23 disclosure in materials related to the Bose FreeSpace EF Series II Business Music System (“Bose
24 FreeSpace System”). *See, e.g.*, Schonfeld Op. Report at ¶150 (citing BOSE_SUB-0000056-59 at
25 56), ¶632 (citing BOSE_SUB-0000062-136 at 122; BOSE_SUB-0000140-147 at 144-145), ¶638
26 (citing BOSE_SUB-0000150-156 at 150, BOSE_SUB-0000157-160 at 157). One of the primary
27 documents upon which Dr. Schonfeld relies to support his opinions regarding the Bose FreeSpace
28 System is the “Bose FreeSpace EF Series II Business Music System Owner’s Guide” (“Bose

FreeSpace Owner's Guide"), which bears a date of July 10, 2004. *See* BOSE_SUB-0000062-136. While Dr. Schonfeld characterizes the July 10, 2004 date as a "publication date," Dr. Schonfeld has not established that the Bose FreeSpace Owner's Guide was publicly available on that date or any date prior to the December 21, 2005 invention date and/or the September 12, 2006 priority date of the '885 Patent. Dr. Schonfeld also has not established that the disclosures in the Bose FreeSpace Owner's Guide were embodied in a system that was publicly available in the United States at a time that would qualify the system as prior art.

764. Dr. Schonfeld also appears to assert that the Bose Freespace product was "publicly available at least as of May 6, 2006." *See* Schonfeld Op. Report at ¶149. However, Dr. Schonfeld did not cite to any evidence supporting this assertion and therefore has not proven that the Bose FreeSpace product was "publicly available" at least as of May 6, 2006. Additionally, I note that May 6, 2006 is after the December 21, 2005 invention date of the '885 Patent and therefore, even if the Bose FreeSpace was "publicly available" as of May 6, 2006, it would not qualify as prior art to the '885 Patent.

765. Relatedly, I also note that one of the Bose FreeSpace documents cited by Dr. Schonfeld has a copyright date of "2006," which is after the December 21, 2005 invention date of the '885 Patent and is not clearly before the September 12, 2006 priority date. *See* BOSE_SUB-0000140-147. Moreover, while some of the Bose FreeSpace materials cited by Dr. Schonfeld appear to be dated prior to the December 21, 2005 invention date and/or the September 12, 2006 priority date of the '885 Patent, Dr. Schonfeld has not proven that any of the materials were actually published in a manner that would qualify them as prior art or that the disclosures therein were embodied in a system that was publicly available in the United States at a time that would qualify the system as prior art.

766. As explained above, there is no disclosure in the Bose Freespace Owner's Guide or any of the other Bose FreeSpace materials cited by Dr. Schonfeld teaching or suggesting that the Bose FreeSpace system is related to or somehow compatible with the Bose Lifestyle 50 System. To the contrary, based on the evidence I have reviewed, it is my opinion that the Bose FreeSpace product and the Bose Lifestyle 50 System are not related or compatible. Moreover, Dr. Schonfeld

1 has not even alleged, let alone explained how or why the Bose FreeSpace product would be
2 combined with the Bose Lifestyle 50 System and/or that such a combination was contemplated or
3 actually made at a date prior to the December 21, 2005 invention date and/or the September 12,
4 2006 priority date of the '885 Patent.

5 767. As another example, in describing the Bose Lifestyle 50 System, Dr. Schonfeld
6 relies on disclosure in a document titled "Understanding Bose link," which relates to the Bose link
7 communication protocol. *See, e.g.*, Schonfeld Op. Report at ¶635 (citing at BOSE_SUB-0000594-
8 601 at 595-597). However, this document is not dated and Dr. Schonfeld has not proven that it
9 was actually published in a manner that would qualify it as prior art or that the disclosures therein
10 were embodied in a system that was publicly available in the United States at a time that would
11 qualify the system as prior art. With respect to the publication of the document, the document
12 itself appears to be an internal Bose document that was not published as it includes a "Company
13 Confidential" designation.

14 768. As explained above, based on the materials I reviewed, it is my opinion that the
15 Bose link communication protocol was not utilized by the Bose Lifestyle 50 System, including the
16 multi-room interface and the Personal media center. Further, Dr. Schonfeld has not explained how
17 or why the Bose Link communication protocol would be combined with the Bose Lifestyle 50
18 System and/or that such a combination was contemplated or actually made at a date prior to the
19 December 21, 2005 invention date and/or the September 12, 2006 priority date of the '885 Patent.

20 769. As another example, in describing the Bose Lifestyle 50 System, Dr. Schonfeld
21 relies on disclosure in three documents related to the Bose Lifestyle SA-2 and SA-3 Stereo
22 Amplifier products. *See, e.g.*, Schonfeld Op. Report at ¶633 (citing BOSE_SUB-0000274-360 at
23 289-290, 292), ¶634 (citing BOSE_SUB-0000361-448 at 384-386), ¶677 (citing BOSE_SUB-
24 0000450-454 at 450-452).

25 770. One of the SA-2 and SA-3 Amplifier documents that Dr. Schonfeld relies upon is
26 dated 2010, which is well after the December 21, 2005 invention date and the September 12, 2006
27 priority date of the '885 Patent. *See* BOSE_SUB-0000274-360. Thus, this document does not
28 qualify as prior art. Another one of the SA-2 and SA-3 Amplifier documents that Dr. Schonfeld

1 relies on is not dated at all and Dr. Schonfeld has not proven that it actually published in a manner
2 that would qualify it as prior art or that the disclosures therein were embodied in a system that was
3 publicly available in the United States at a time that would qualify the system as prior art. *See*
4 BOSE_SUB-0000450-454.

5 771. The third SA-2 and SA-3 Amplifier document relied on by Dr. Schonfeld is titled
6 “The Bose Lifestyle SA-2 and SA-3 Stereo Amplifier Owner’s Guide” (“SA-2 and SA-3 Amplifier
7 Guide”), which is dated 2004. *See* BOSE_SUB-0000361-448. However, Dr. Schonfeld did not
8 establish that the SA-2 and SA-3 Amplifier Guide was publicly available in 2004 or any date prior
9 to the December 21, 2005 invention date and/or the September 12, 2006 priority date of the ’885
10 Patent. Dr. Schonfeld also did not establish that the disclosures in the SA-2 and SA-3 Amplifier
11 Guide were embodied in a system that was publicly available in the United States at a time that
12 would qualify the system as prior art.

13 772. As explained above, unlike the Bose Lifestyle 50 System, the SA-2 and SA-3
14 Amplifier products appear to have Bose link communication protocol capability. *See* BOSE_SUB-
15 0000361-448 at 366. Specifically, the SA-2 and SA-3 Amplifier products appear to be “Bose link
16 expansion products.” *See* BOSE_SUB-0000594-601 at 595, 601. However, in order to utilize the
17 Bose link communication protocol, the SA-2 and SA-3 Amplifier products need to be connected
18 to a “Bose link enabled media center.” *Id.* at 595 (“For a Bose link setup to work the system must
19 include a Bose link enabled media center (a controller), a Bose link expansion product, and an
20 expansion remote control.”). As explained above, based on the evidence I have reviewed, the
21 multi-room interface of the Bose Lifestyle 50 System did not utilize the Bose link communication
22 protocol and therefore is not a “Bose link enabled media center.” Thus, if an SA-2 or SA-3
23 Amplifier product were connected to the multi-room interface of the Bose Lifestyle 50 System,
24 the Bose link communication protocol could not be used. *Id.* (“To communicate [using the Bose
25 link communication protocol] there must be at least two participants that speak the same
26 language.”).

27 773. Additionally, Dr. Schonfeld has not alleged, let alone proven that the SA-2 and SA-
28 3 Amplifier products were actually combined with a Bose Lifestyle 50 System at a date prior to

1 the December 21, 2005 invention date and/or the September 12, 2006 priority date of the '885
2 Patent.

3 774. For the reasons above, Dr. Schonfeld has not proven that the actual Bose Lifestyle
4 50 System or the combination of the various Bose products he relies on qualifies as prior art.

5 **2. The Bose Lifestyle 50 System did not have “Zone Scenes” Functionality**

6 775. Claim 1 of the '885 Patent requires a “first zone player” that is programmed with
7 the capability to be added to two different “zone scenes” and then later operate in accordance with
8 a selected one of the two different “zone scenes.”

9 776. As explained above, a “zone scene” requires a group of “zone players” that (i) is
10 “predefined” and “previously-saved” at a user’s request in advance of the group being activated
11 for synchronous playback as part of an initial “setup” phase during which the group members are
12 “added” to the “zone scene” by a user using a “network device” (*i.e.*, a controller device) and (ii)
13 initially exists in an inactive state such that the “zone players” added to the “zone scene” are “to
14 be configured for synchronous [media] playback” at a future time when the group is invoked, but
15 do not change their operating mode for audio playback at the time of creation and can thereafter
16 be used for individual audio playback while the “predefined,” “previously-saved” group remains
17 in existence and is available to be “selected for invocation” in the future. *Supra* Section IX.A.4.

18 777. Based on the evidence I have reviewed regarding the Bose Lifestyle 50 System, it
19 is my opinion that neither the Acoustimass modules of the Bose Lifestyle 50 System nor the SA-
20 2 and SA-3 amplifiers that appear to have been compatible with the Bose Lifestyle 50 System
21 (each of which may be referred to herein as a “Lifestyle player”) had the capability to be added to
22 a “zone scene” – let alone the capability to be added to two different “zone scenes” and then later
23 operate in accordance with a selected one of the two different “zone scenes,” as required by claim
24 1 of the '885 Patent.¹⁸

25 778. As explained above, the evidence I reviewed indicates that the Personal music

26 ¹⁸ It is also my opinion that the Jewel Cube speakers of the Bose Lifestyle 50 System did not have the
27 capability to be added to a “zone scene” – let alone the capability to be added to two different “zone scenes”
28 and then later operate in accordance with a selected one of the two different “zone scenes,” as required by
claim 1 of the '885 Patent. Dr. Schonfeld does not appear to dispute this.

center of the Bose Lifestyle 50 System enabled a user to set up a “shared source” of audio that could be distributed via audio cables from the centralized multi-room interface to Lifestyle players in up to four rooms (rooms A, B, C, and D) so that the same audio could be played back simultaneously via the Lifestyle players and their connected speakers (e.g., the Jewel Cube speakers of the Bose Lifestyle 50 System). BOSE_SUB-0000001-55 at 44-45. Based on the Bose Lifestyle 50 System evidence I reviewed, setting up a “shared source” was the only way to create any sort of “group” of Lifestyle players that were capable of playing back the same audio simultaneously. As an example, to set up a “shared source” in two rooms A and B, a user could (1) use the ROOM button on the Personal music center to select room A and then use a source button to set an audio source for room A; and (2) use the ROOM button on the Personal music center to select room B and then use the same source button to set the same audio source for room B. Thereafter, the user could use the ROOM button again to select both rooms A and B together such that both rooms could be controlled together:

Setting up a shared source

Now, let’s say the system is already on and you want to play the FM radio in rooms A and B:

1. Wake up the Personal music center.
2. Press the ROOM button until the room indicator **A** is displayed. Press the FM source button and adjust the volume to the desired level for room A.
3. Press the ROOM button again to select room **B**. Press the FM source button and adjust the volume to the desired level for room B. Now, the indicators **A B** are displayed.
4. Press the ROOM button again. The indicators **A B** appear on the display indicating that you can control these two rooms together. Any button command given now (SOURCE, VOLUME, MUTE, ON/OFF, SLEEP) is applied to both rooms.

BOSE_SUB-0000001-55 at 44.

779. Alternatively, a user could set up a “shared source” for all the available rooms A-D by pressing the HOUSE button on the Personal music center followed by pressing a source button to select the audio source that the user wanted to listen to in all rooms:

Using the HOUSE button

Using the HOUSE button, you can link all rooms together and control them as one. When you press the HOUSE button, an empty box indicator is displayed for each connected room. Any button pressed after that (any source button, VOLUME, MUTE, or SLEEP) affects every room. When you are done listening you can press OFF to turn off the entire system.

Note: If you do not press any additional buttons after pressing HOUSE, pressing HOUSE again cancels HOUSE mode.

BOSE_SUB-0000001-55 at 45.¹⁹

780. When a user set up a “shared source” in one of the ways described above, the evidence I have reviewed indicates that, after the user selected the shared audio source, the Personal music center would transmit information to the centralized multi-room interface, which would configure itself to distribute the same audio from the same audio source to each of the rooms so that the same audio could be played back simultaneously via the Lifestyle players. *See, e.g.*, BOSE_SUB-0000001-55 at 6 (“The Bose multi-room interface, with four independent audio outputs that allow you to enjoy Bose sound throughout your home.”), 12 (illustrating a Bose Lifestyle 50 System configuration with a CD player and an Acoustimass module connected the multi-room interface), 17 (illustrating various audio sources connected to multi-room interface via audio input cables), 19 (“When batteries are first installed in the music center; it sets up a radio-frequency link with the closest multi-room interface.”), 44-45 (explaining how to use ROOM and HOUSE buttons of the Personal music center to set up an audio source for one or more rooms connected to the multi-room interface).

781. Further, the evidence I have reviewed indicates that once a “shared source” of audio was set up, a Lifestyle player sharing the audio source could not thereafter be used for individual audio playback until a user used the ROOM button of the Personal music center to select the Lifestyle player and then used a source button to set the audio source for the Lifestyle player to a different audio source such that it no longer shares an audio source with other Lifestyle players. *Id.* at 44 (“Returning to single-room control[:] After you have gained control of multiple rooms

¹⁹ It is worth noting that pressing the HOUSE button itself does not cause, and is not used to configure, all the players to play audio in synchrony. For example, to control multiple players that are each playing different audio, a user could press the HOUSE button followed by pressing the mute button to mute all the players. *See* BOSE_SUB-0000001-55 at 45.

1 using the ROOM button, you can use the ROOM button again to gain control of a single room.
2 Press ROOM until the room you want is displayed (A, B, C, or D). Control that room as
3 desired.”). In this way, a group of Lifestyle players having a “shared source” of audio would have
4 to be destroyed before any one of the Lifestyle players in the group could be used for individual
5 audio playback.

6 782. In my opinion, this “shared source” functionality of the Bose Lifestyle 50 System
7 is distinctly different from the “zone scenes” capability that is described and claimed in the ’885
8 Patent, for several reasons.

9 783. First, a group of Lifestyle players having a “shared source” of audio was not
10 “predefined” and “previously-saved” at a user’s request in advance of the group being activated
11 for synchronous playback as part of an initial “setup” phase during which the group members were
12 “added” to the group by a user using a “network device” (*i.e.*, a controller device), as required by
13 claim 1 of the ’885 Patent. To the contrary, the Bose Lifestyle 50 System evidence I have reviewed
14 makes clear that a group of Lifestyle players having a “shared source” of audio was a temporary,
15 ad-hoc group that was automatically activated at the same time it was created. *See, e.g.*,
16 BOSE_SUB-0000001-55 at 43 (“A shared source is one that is playing in the controlled room as
17 well as in up to three additional rooms”), 44 (“Setting up a shared source[:]: ... Press the ROOM
18 button again. The A B indicators appear on the display indicating that you can control these two
19 rooms together. Any button command given now (SOURCE, VOLUME, MUTE, ON/OFF,
20 SLEEP) is applied to both rooms.”), 45 (“Press the HOUSE button before each command to apply
21 the command to all rooms: Press ... HOUSE then a source [to] [p]lay the selected source in all
22 connected rooms.”).²⁰

23 784. Second, a group of Lifestyle players having a “shared source” of audio did not
24 initially exist in an inactive state such that the Lifestyle players added to the “zone scene” could
25 continue to be used for individual audio playback while the group remained in existence and was
26 available to be “selected for invocation” in the future, as required by claim 1 of the ’885 Patent.

27 ²⁰ Like Squeezebox, the Bose Lifestyle 50 System utilizes temporary, ad-hoc grouping. As such, the Bose
28 Lifestyle 50 System suffers from the same defects with respect to claim 1 of the ’885 Patent as Squeezebox.

1 To the contrary, the Bose Lifestyle 50 System evidence I have reviewed makes clear that a group
2 of Lifestyle players having a “shared source” of audio was automatically activated at the time of
3 creation, and that once a group of Lifestyle players having a “shared source” of audio was created,
4 it was not possible for a user to use any of the Lifestyle players in the group for individual audio
5 playback unless the group was destroyed by changing the audio source for the Lifestyle player that
6 the user wanted to use for individual audio playback. *See, e.g.*, BOSE_SUB-0000001-55 at 44
7 (“Returning to single-room control[:] After you have gained control of multiple rooms using the
8 ROOM button, you can use the ROOM button again to gain control of a single room. Press ROOM
9 until the room you want is displayed (A, B, C, or D). Control that room as desired.”).

10 785. Third, a group of Lifestyle players having a “shared source” of audio was not a
11 group of “zone players” that are “to be configured for synchronous playback of media” when the
12 group is “invoked” for the additional reason that the invocation of a group of Lifestyle players
13 having a “shared source” of audio – which took place at the same time the group was created – did
14 not involve any change to the configuration of the Lifestyle players as its relates to audio playback.
15 To the contrary, the Bose Lifestyle 50 System evidence I have reviewed indicates that a Lifestyle
16 player in a group of Lifestyle players having a “shared source” of audio would have had the same
17 configuration for audio playback both before and after the group was invoked. *See, e.g.*
18 BOSE_SUB-0000001-55 at 6, 12, 17, 19, 44-45; BOSE_SUB-0000684-687 at 684-685. In fact,
19 based on my review of the Bose Lifestyle 50 System evidence, it appears that a Lifestyle player
20 would not have had any awareness that it had been added to a group of Lifestyle players having a
21 “shared source” of audio that would have prompted the Lifestyle player to change its configuration
22 for audio playback. *Id.* Instead, as noted above, it is the multi-room interface – not Lifestyle
23 players – that would change its configuration in order to distribute the audio from the “shared
24 source” to the Lifestyle players in the group.

25 786. Fourth, even setting aside these fundamental differences between a group of
26 Lifestyle players having a “shared source” of audio and a “zone scene,” a Lifestyle player did not
27 have the capability to be a member of two different groups of Lifestyle players each having a
28 “shared source” that are both in existence at the same time such that they are both available to be

1 “selected for invocation,” which is another requirement of the claimed “zone scenes” capability.
2 To the contrary, the Bose Lifestyle 50 System evidence I have reviewed establishes that a Lifestyle
3 player could only be a member of one group of Lifestyle players having a “shared source” of audio
4 that was in existence at any given time, and that the only way a Lifestyle player in a first group of
5 Lifestyle players having a “shared source” of audio could have been added to a second group of
6 Lifestyle players having a “shared source” of audio was to destroy the first group by changing the
7 audio source for the Lifestyle player to match the “shared source” of audio for the second group.
8 *See, e.g.* BOSE_SUB-0000001-55 at 43-45 (explaining how to use ROOM and HOUSE buttons to
9 set up an audio source for one or more rooms).

10 787. Fifth, the Bose Lifestyle 50 System is the type of “conventional multi-zone audio
11 system” that the ’885 Patent describes as having limitations with regard to grouping and that the
12 “zone scenes” functionality of the ’885 Patent distinguished and improved upon. *See* ’885 Patent
13 at 1:30-2:24; *see also* Case No. 20-6754, D.I. 309 at 3-5, 12.

14 788. I also note that the Bose Lifestyle 50 System evidence I reviewed never uses the
15 term “zone scenes” or otherwise describes any technology that would have enabled a user to (i)
16 first create a group of Lifestyle players that was “predefined” and “previously-saved” in advance
17 of being activated and then (ii) later select that group for “invocation” in order to activate it.

18 789. I further note that the Bose Lifestyle 50 System fails to disclose or suggest any
19 capability for a user to save a group of Lifestyle players having a “shared source” of audio
20 “according to a common theme,” such as by assigning it a name, which fails to meet the
21 requirements of Google's proposed construction of a “zone scene.”

22 790. Thus, for at least these reasons, it is my opinion that the Lifestyle players relied
23 upon by Dr. Schonfeld in his Opening Report did not have the capability to be added to a “zone
24 scene” – let alone the capability to be added to two different “zone scenes” and then later operate
25 in accordance with a selected one of the two different “zone scenes,” as required by claim 1 of the
26 ’885 Patent.

27 791. Despite the foregoing evidence establishing that Lifestyle players did not have
28 “zone scenes” capability, in his Opening Report, Dr. Schonfeld opines the Lifestyle players were

1 capable of being added to a “zone scene” based on a theory that appears to rely on “the addition
2 of multiple rooms and zones ... to the Lifestyle ecosystem” using a Bose link enabled media center
3 and the “Bose Link communication protocol.” *See* Schonfeld Op. Report at ¶¶ 650-653. However,
4 nothing in Dr. Schonfeld’s Opening Report alters my opinion that a group of Lifestyle players
5 having a “shared source” of audio is not a “zone scene” for all of the reasons explained above, and
6 as such, the Lifestyle players did not have the capability to be added to a “zone scene.”

7 792. As an initial matter, Dr. Schonfeld’s opinion that the Bose Lifestyle 50 System
8 discloses a “zone scene” is not based on any functionality of the actual Bose Lifestyle 50 System
9 itself. *See* Schonfeld Op. Report at ¶¶ 650-653. Instead, Dr. Schonfeld relies exclusively on
10 disclosure related to (i) setting up SA-2 and/or SA-3 Amplifiers in “additional rooms” using Bose
11 link technology of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system”
12 (*id.* at ¶652 (citing BOSE_SUB-0000274-360 at 297 and BOSE_SUB-0000361-448 at 385-386))
13 – not a Bose Lifestyle 50 System that does not have Bose link capability; and (ii) the Bose link
14 communication protocol (*id.* at ¶653 (citing BOSE_SUB-0000594-601 at 595-596)) – which, as
15 explained above, is not utilized by the Bose Lifestyle 50 System. For these reasons alone, Dr.
16 Schonfeld’s theory is flawed.

17 793. Regardless, what Dr. Schonfeld identifies in these other disclosures that are
18 unrelated to and incompatible with the Bose Lifestyle 50 System does not teach a “zone scene.”

19 794. To start, Dr. Schonfeld does not even attempt to explain how what he points to
20 meets the actual requirements of a “zone scene,” such as the requirement for a group that is
21 “predefined” or “previously saved” in advance of being activated for synchronous playback or the
22 requirement that the group initially exists in an inactive state such that the group members are “to
23 be configured for synchronous [media] playback” at a future time when the group is “invoked.”
24 *See* Schonfeld Op. Report at ¶¶ 650-653. Instead, Dr. Schonfeld’s opinion that these other
25 disclosures teach a “zone scene” appears to be based exclusively on his statement that “Bose
26 LifeStyle allows for the addition of multiple rooms and zones to the be added to the Lifestyle
27 ecosystem,” which is illustrated in the following image that he cites to from the SA-2 and SA-3
28 Amplifier Guide:

Setting Up Additional Rooms For Sound

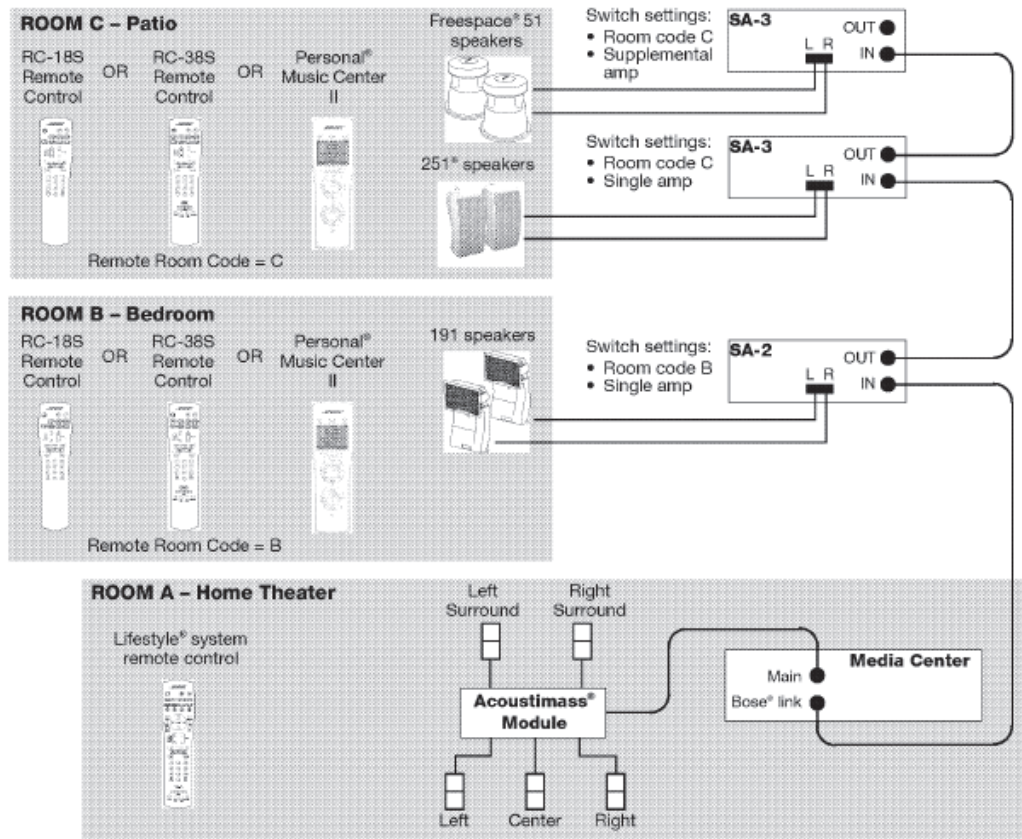
Setup guidelines for additional rooms

If you have a Lifestyle® 18 series II, 28 series II, 38 or 48 home entertainment system, you can experience stereo sound in up to 14 other rooms using Lifestyle® stereo amplifiers, compatible speaker systems and remote controls for the other rooms.

- Remote controls for other rooms must be set to the same house code as the main room remote, but each remote must be set to a different room code. See "Setting up remote controls for other rooms" on page 23.
- The Lifestyle® amplifier and its remote control must be set to the same room code. See "Setting up the amplifier room code" on page 24.
- When using more than one amplifier to power more than two speakers in a room (Figure 18, room C), all amplifiers must be set to the same room code. Also, one amplifier must be set to the single amp mode and all others must be set to the supplemental amp mode. See "Single and supplemental amplifiers" on page 25.

Figure 18

Sample installation of Lifestyle® stereo amplifiers



1 (“[T]he Bose Link communication protocol allows for an indication that additional rooms, for
2 example, have been added to the media center.”).

3 795. Although unclear, in this regard Dr. Schonfeld appears to be asserting that manually
4 hardwiring additional SA-2 or SA-3 amplifiers in additional rooms to a Bose link enabled Lifestyle
5 media center teaches a “zone scene.” *Id.* I disagree. The mere fact that a user can manually
6 hardwire additional SA-2 or SA-3 amplifiers in additional rooms to a Bose link enabled Lifestyle
7 media center does not teach a “zone scene,” which requires a group of “zone players” that (i) is
8 “predefined” and “previously-saved” at a user’s request in advance of the group being activated
9 for synchronous playback as part of an initial “setup” phase during which the group members are
10 “added” to the “zone scene” by a user using a “network device” (*i.e.*, a controller device) and (ii)
11 initially exists in an inactive state such that the “zone players” added to the “zone scene” are “to
12 be configured for synchronous [media] playback” at a future time when the group is invoked, but
13 do not change their operating mode for audio playback at the time of creation and can thereafter
14 be used for individual audio playback while the “predefined,” “previously-saved” group remains
15 in existence and is available to be “selected for invocation” in the future. Dr. Schonfeld’s theory
16 is flawed for numerous reasons.

17 796. First, manually hardwiring SA-2 or SA-3 amplifiers to a Bose link enabled Lifestyle
18 media center does not involve a user adding the SA-2 or SA-3 amplifiers to a “zone scene” using
19 a “network device” whereby the “zone scene” is “predefined” and “previously-saved” at a user’s
20 request, which is a required aspect of a “zone scene.”

21 797. Second, manually hardwiring SA-2 or SA-3 amplifiers to a Bose link enabled
22 Lifestyle media center does not result in a group of SA-2 or SA-3 amplifiers that are “to be
23 configured for synchronous [media] playback” at a future time when the group is invoked, which
24 is another required aspect of a “zone scene.” Instead, the evidence I reviewed indicates that SA-2
25 or SA-3 amplifiers that are hardwired in series to a Bose link connector can play different audio
26 (stream 1 or stream 2) depending on the configuration of their corresponding dedicated remote
27 controls. BOSE_SUB-0000594-601 at 597 (explaining that “[a] Bose link enabled media center
28 is also capable of managing two separate sources at the same time,” “any of the expansion rooms

1 can be configured to operate on either stream 1 or stream 2,” and “[i]f an expansion remote
2 configured for stream 1 sends an ON command to the media center, the media center will activate
3 the pins that carry stream 1 information”).

4 798. Third, because an SA-2 or SA-3 amplifier can only be selected individually via its
5 own dedicated remote control, it was not possible for a group of multiple SA-2 or SA-3 amplifiers
6 in different rooms to be “selected for invocation,” which is another required aspect of a “zone
7 scene.” As explained above, the evidence I reviewed indicates that each such SA-2 or SA-3
8 amplifier could only be controlled by its own dedicated Bose link enabled remote control that was
9 set to the same room code as the SA-2 or SA-3 amplifier. *See* BOSE_SUB-0000361-448 at 384-
10 386 (“Remote controls for other rooms must be set to the same house code as the main room
11 remote, but each remote must be set to a different room code. ... The Lifestyle® amplifier and its
12 remote control must be set to the same room code.”). Because each dedicated remote control is
13 coded to only a *single* amplifier, there is no remote control that enables the selection of a group of
14 *multiple* amplifiers for invocation. And I have seen no evidence that multiple SA-2 or SA-3
15 amplifiers that are hardwired to a Bose link enabled Lifestyle media center could be controlled
16 together with a single Bose link enabled remote control. Notably, as explained above, based on
17 the evidence I reviewed, the Personal music center of the Bose Lifestyle 50 System was not Bose
18 link enabled and therefore could not be used to control multiple SA-2 or SA-3 amplifiers that are
19 hardwired to a Bose link enabled Lifestyle media center. To the contrary, the Personal music
20 center and multi-room interface of the Bose Lifestyle 50 System communicate using a proprietary
21 radio frequency communication protocol that was specifically developed for the Bose Lifestyle 50
22 System and that is “not compatible” with protocols used in other Bose systems. *See* BOSE_SUB-
23 0000663-683 at 666.

24 799. Moreover, as explained above, in order for SA-2 and SA-3 amplifiers that are
25 hardwired to a Bose link enabled Lifestyle media center to be able to playback the same audio
26 simultaneously, the SA-2 and SA-3 amplifiers need to first be set to the same stream of audio
27 (stream 1 or stream 2). *See, e.g.,* BOSE_SUB-0000594-601 at 597. In this regard, the SA-2 and
28 SA-3 amplifiers that are hardwired to a Bose link enabled Lifestyle media center share a “stream”

1 of audio and thus rely upon the same “shared source” form of grouping as the Bose LifeStyle 50
2 System. Thus, for the same reasons that the “shared source” functionality of the Bose Lifestyle 50
3 System fails to teach the “zone scenes” capability that is described and claimed in the ’885 Patent,
4 this Bose link configuration relied on by Dr. Schonfeld also fails to teach the “zone scenes”
5 capability.

6 800. Turning to claim 1’s additional requirement that the “first zone player” be
7 programmed with the capability to be a member of two different “zone scenes” comprising
8 overlapping “predefined” groups that are both in existence at the same time such that they are both
9 available to be “selected for invocation,” Dr. Schonfeld opines that a Lifestyle player for a Bose
10 Lifestyle 50 System would have met this requirement as well, based on the following theory:
11 “[T]he Bose Lifestyle expressly teaches managing two separate streaming sources at one time,
12 such that room A can operate on stream 1, and room B can operate stream 2, for example.”
13 Schonfeld Op. Report at ¶ 656. However, this theory is flawed for a number of reasons.

14 801. First, Dr. Schonfeld’s opinion that the Bose Lifestyle 50 System discloses two
15 different “zone scenes” comprising overlapping “predefined” groups that are both in existence at
16 the same time is not based on any functionality of the actual Bose Lifestyle 50 System itself. *See*
17 Schonfeld Op. Report at ¶¶ 654-656. Instead, Dr. Schonfeld relies exclusively on disclosure related
18 to the Bose link communication protocol (*id.* at ¶ 656 (citing BOSE_SUB-0000594-601 at 597) –
19 which, as explained above, is not utilized by and incompatible with the Bose Lifestyle 50 System.
20 For this reason alone, Dr. Schonfeld’s theory is meritless.

21 802. Second, I fail to see how Dr. Schonfeld’s theory has any relevance to the
22 requirement that the “first zone player” be programmed with the capability to be a member of two
23 different “zone scenes” comprising overlapping “predefined” groups that are both in existence at
24 the same time such that they are both available to be “selected for invocation.” Instead, per Dr.
25 Schonfeld’s own words, his theory is based on the Bose link communication protocol enabling a
26 single room A (not a group of rooms) being able to play audio provided via stream 1 and a single
27 room B (not a group of rooms) being able to play audio provided via stream 2. This has nothing
28 to do with groups of Lifestyle players period, let alone two different “zone scenes” comprising

1 overlapping “predefined” groups that are both in existence at the same time such that they are both
2 available to be “selected for invocation.” Instead, what Dr. Schonfeld describes is just two separate
3 rooms being able to play two separate streams of audio.

4 803. Third, if Dr. Schonfeld is suggesting that the Bose link technology allows a group
5 of Lifestyle players to be defined by the stream of audio (stream 1 or stream 2) that they are
6 configured to play, any given Lifestyle player can only be configured to play a single stream of
7 audio at a given time. Thus, a Lifestyle player could never be a member of two different co-
8 existing groups that are defined by different streams of audio. For example, the only way a
9 Lifestyle player in a first group of Lifestyle players configured for stream 1 could have been added
10 to a second group of Lifestyle players configured for stream 2 would be to destroy the first group
11 by changing the audio stream for the Lifestyle player from stream 1 to stream 2. *See, e.g.*,
12 BOSE_SUB-0000594-601 at 597.

13 804. Thus, nothing in Dr. Schonfeld’s Opening Report alters my opinion that the
14 Lifestyle players in the Bose Lifestyle 50 System did not have the capability to be added to a “zone
15 scene” – let alone the capability to be added to two different “zone scenes” and then later operate
16 in accordance with a selected one of the two different “zone scenes,” as required by claim 1 of the
17 ’885 Patent.

18 **3. The Bose Lifestyle 50 System Did Not Meet Limitation 1.0**

19 805. Limitation 1.0 of claim 1 of the ’885 patent requires a “first zone player.”

20 806. As noted above, Sonos’s proposed construction of “zone player” as that term is
21 used in the ’885 Patent is a “data network device configured to process and output audio.” *Supra*
22 Section IX.A.2. And related to this proposed construction, Sonos’s interpretation of the plain and
23 ordinary meaning of the term “data network” is “a medium that interconnects devices, enabling
24 them to send digital data packets to and receive digital data packets from each other.” *Id.*

25 807. As an initial matter, it is not clear what device in the Bose Lifestyle 50 System Dr.
26 Schonfeld is alleging to be the claimed “first zone player.” *See* Schonfeld Op. Report at ¶¶622-
27 624. Instead, Dr. Schonfeld merely states that the “Bose Lifestyle player corresponds to the
28 claimed Zone Player and it provides the ability to stream music from a controller over a Wi-Fi or

1 ethernet network.” *Id.* at 622. I am unaware of any device in the Bose Lifestyle 50 System called
2 the “Bose Lifestyle player.” For this reason alone, Dr. Schonfeld has failed to prove that the Bose
3 Lifestyle 50 System discloses the “first zone player” of limitation 1.0.

4 808. Regardless, in my opinion, the Bose Lifestyle 50 System fails to disclose limitation
5 1.0 of claim 1 of the ’885 Patent for at least the following reasons.

6 809. First, to the extent Dr. Schonfeld is arguing that either a Jewel Cube speaker or an
7 Acoustimass module of the Bose Lifestyle 50 System is the “first zone player,” I disagree.
8 Applying Sonos’s constructions of “zone player” and “data network,” neither a Jewel Cube
9 speaker nor an Acoustimass module is a “first zone player” because neither of these devices is a
10 data network device that can send digital data packets to and receive digital data packets from
11 another device. Instead, the evidence I have reviewed shows that a Jewel Cube speaker merely
12 receives an audio signal over an audio cable from an Acoustimass module, and that an Acoustimass
13 module receives an audio signal over an audio cable from the multi-room interface of the Bose
14 Lifestyle 50 system. *See* BOSE_SUB-0000001-55 at 11-12, 42; BOSE_SUB-0000361-448 at 376.
15 There is no evidence of two-way digital data packet communication between a Jewel Cube speaker
16 and an Acoustimass module or between an Acoustimass module and the multi-room interface of
17 the Bose Lifestyle 50 system. There is also no evidence of any communication whatsoever
18 between Jewel Cube speakers or between Acoustimass modules.

19 810. Second, to the extent Dr. Schonfeld is arguing that a Jewel Cube speaker of the
20 Bose Lifestyle 50 System is the “first zone player,” I disagree because a Jewel Cube speaker is not
21 configured to process and output audio. Instead, a Jewel Cube speaker is a passive speaker that is
22 hard-wired to an Acoustimass module and simply outputs audio in the form of sound once an
23 analog signal is received via an audio cable. *See* BOSE_SUB-0000001-55 at 7, 11.

24 811. Third, to the extent Dr. Schonfeld is arguing that an SA-2 or SA-3 amplifier is the
25 “first zone player,” I disagree on the basis that an SA-2 or SA-3 amplifier is not part of the Bose
26 Lifestyle 50 System. Regardless, if an SA-2 or SA-3 amplifier were actually connected to the
27 multi-room interface of the Bose Lifestyle 50 System, it appears to me that it would operate like
28 an Acoustimass module in the sense that it would receive an audio signal over an audio cable from

1 the multi-room interface of the Bose Lifestyle 50 system with no two-way digital data packet
2 communication between an SA-2 or SA-3 amplifier and the multi-room interface of the Bose
3 Lifestyle 50 system. *See* BOSE_SUB-0000001-55 at 11-12, 42; BOSE_SUB-0000361-448 at 376.

4 812. Finally, I also note that I disagree with Dr. Schonfeld's statement that the "Bose
5 Lifestyle player corresponds to the claimed Zone Player and it provides the ability to stream music
6 from a controller over a Wi-Fi or ethernet network." *See* Schonfeld Op. Report at ¶622. I have
7 not seen any evidence teaching or suggesting that a Jewel Cube speaker or Acoustimass module
8 of the Bose Lifestyle 50 System is able to "stream music from a controller over a Wi-Fi or ethernet
9 network." I have also not seen any evidence that the multi-room interface or Personal Music
10 Center of the Bose Lifestyle 50 System are capable of connecting to Wi-Fi or Ethernet. Further, I
11 have not seen any evidence teaching or suggesting that an SA-2 or SA-3 amplifier is able to
12 "stream music from a controller over a Wi-Fi or ethernet network."

13 **4. The Bose Lifestyle 50 System Did Not Meet Limitation 1.1**

14 813. Limitation 1.1 of claim 1 of the '885 patent requires the "first zone player" to have
15 "a network interface that is configured to communicatively couple the first zone player to at least
16 one data network."

17 814. As noted above, Sonos's interpretation of the plain and ordinary meaning of the
18 term "network interface" as that term is used in the '885 Patent is "a physical component of a
19 device that provides an interconnection with a data network," and the plain and ordinary meaning
20 of "data network" is "a medium that interconnects devices, enabling them to send digital data
21 packets to and receive digital data packets from each other." *Supra* Section IX.A.1, IX.A.3.

22 815. As an initial matter, it is not clear what device in the Bose Lifestyle 50 System Dr.
23 Schonfeld is alleging to be the claimed "first zone player" or what component of such device is
24 the claimed "network interface." *See* Schonfeld Op. Report at ¶¶626-635. Instead, at best, Dr.
25 Schonfeld states that the "Bose Lifestyle discloses a network interface including both Wi-Fi and
26 ethernet capabilities that couples the Bose Lifestyle to a data network existing at least between the
27 Bose Lifestyle and the controller" and then cites to disclosure from the Bose Lifestyle 50 System
28 Guide that does not mention any Wi-Fi or ethernet capabilities. *Id.* at 627. As explained above

1 with respect to limitation 1.0, I have not seen any evidence teaching or suggesting that a Jewel
2 Cube speaker or an Acoustimass module of the Bose Lifestyle 50 System has “Wi-Fi and ethernet
3 capabilities.” Likewise, I have also not seen any evidence that the multi-room interface or Personal
4 Music Center of the Bose Lifestyle 50 System has “Wi-Fi and ethernet capabilities.” For this
5 reason alone, Dr. Schonfeld has failed to prove that the Bose Lifestyle 50 System discloses the
6 “network interface” of limitation 1.1. Further, I have not seen any evidence teaching or suggesting
7 that an SA-2 or SA-3 amplifier is able to “stream music from a controller over a Wi-Fi or ethernet
8 network.”

9 816. Regardless, in my opinion, the Bose Lifestyle 50 System fails to disclose limitation
10 1.1 of claim 1 of the '885 Patent.

11 817. Applying Sonos's constructions of “network interface” and “data network,” neither
12 a Jewel Cube speaker nor an Acoustimass module of the Bose Lifestyle 50 System has a “network
13 interface.” This follows from the fact that neither a Jewel Cube speaker nor an Acoustimass
14 module is a data network device that can send digital data packets to and receive digital data
15 packets from another device, as explained above with respect to limitation 1.0.

16 818. To support his assertion that the Bose Lifestyle 50 System discloses limitation 1.1
17 of claim 1 of the '885 Patent, Dr. Schonfeld cites to disclosure in the Bose FreeSpace Guide. *See*
18 Schonfeld Op. Report at ¶632 (citing BOSE_SUB-0000062-136 at 122, 144-145). As explained
19 above, however, the Bose FreeSpace System is not part of the Bose Lifestyle 50 System and there
20 is no disclosure in the Bose FreeSpace Guide or any of the other Bose materials cited by Dr.
21 Schonfeld teaching or suggesting that the Bose FreeSpace System is related to or somehow
22 compatible with the Bose Lifestyle 50 System. To the contrary, based on the materials I have
23 reviewed, it is my opinion that the Bose FreeSpace product and the Bose Lifestyle 50 System are
24 not related or compatible. Instead, the systems are alternatives for distributing audio from a central
25 location to one or more rooms or zones via an audio cable, albeit with different capabilities.
26 Moreover, Dr. Schonfeld has not even alleged, let alone explained how or why the Bose FreeSpace
27 product would be combined with the Bose Lifestyle 50 System and/or that such a combination was
28 contemplated or actually made at a date prior to the December 21, 2005 invention date and/or the

1 September 12, 2006 priority date of the '885 Patent.

2 819. Further, applying Sonos's construction of "network interface" and the plain and
3 ordinary meaning of "data network," the Bose FreeSpace Guide does not teach a "first zone player"
4 with a "network interface." Instead, based on the materials I have reviewed, it appears that the
5 centralized E4 unit of the Bose FreeSpace System connects to passive speakers in up to four zones
6 via an audio cable and that the centralized E4 unit simply outputs analog audio signals to the
7 passive speakers and the passive speakers in turn output audio in the form of sound once the analog
8 signals are received. *See, e.g.*, BOSE_SUB-0000062-136 at 93. I have seen no evidence that the
9 passive speakers connected to a E4 unit include a "network interface" that enables them to send
10 digital data packets to and receive digital data packets from another device via a data network.

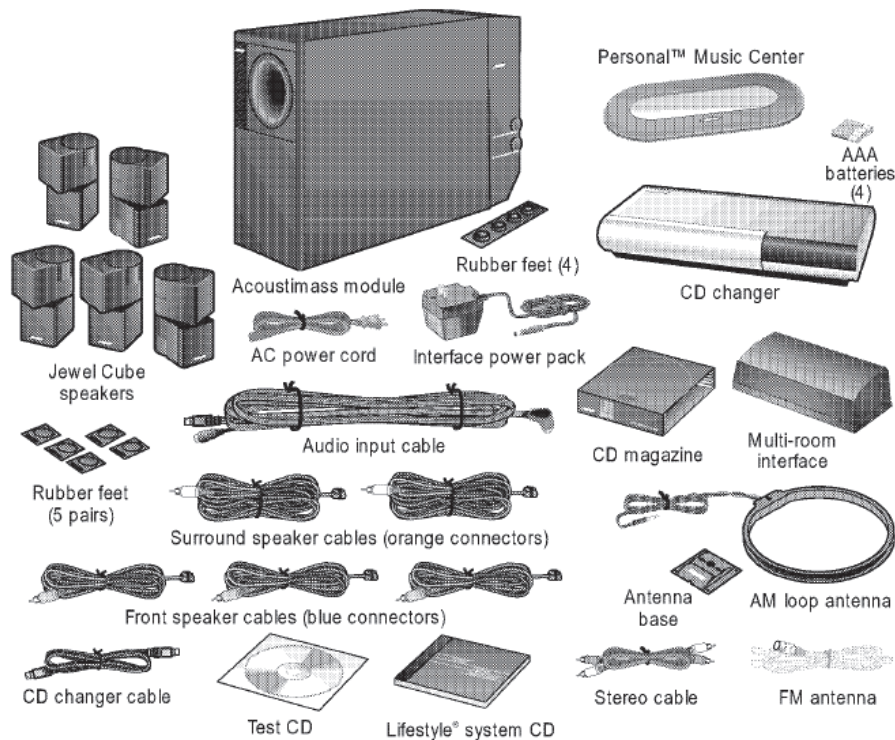
11 820. Notably, the Bose FreeSpace Guide does disclose the use of an Ethernet cable to
12 connect a "user interface" to the centralized E4 unit of the Bose FreeSpace System. *See, e.g.*,
13 BOSE_SUB-0000062-136 at 89. However, the "user interface" is not a "zone player" so the fact
14 that it may have a "network interface" that enables them to send digital data packets to and receive
15 digital data packets from another device is irrelevant.

16 821. Despite not citing anything about an SA-2 or SA-3 Amplifier for limitation 1.0, Dr.
17 Schonfeld cites to various disclosures from the SA-2 and SA-3 Amplifier Guide for limitation 1.1.
18 *See* Schonfeld Op. Report at ¶633-634. As an initial matter, the SA-2 or SA-3 Amplifier products
19 are not part of a Bose Lifestyle 50 System, as shown below:
20
21
22
23
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28

Figure 1

What comes with your Lifestyle® 50 system:

- Personal music center
- CD changer
- Multi-room interface
- Interface power pack*
- 5 Jewel Cube® speakers
- 5 speaker cables
- Acoustimass module
- AC power (mains) cord*
- 14 self-adhesive rubber feet (4 for the module and 5 pairs for the Jewel Cube speakers)
- Audio input cable
- CD changer cable
- Stereo cable
- 4 AAA batteries
- FM antenna
- AM loop antenna
- AM antenna base
- CD magazine
- Lifestyle® system CD
- Test CD



See BOSE_SUB-0000001-55 at 7.

822. Additionally, Dr. Schonfeld points to disclosure from the SA-2 and SA-3 Amplifier Guide to support his assertion that the “Bose Lifestyle provide[s] instructions for setting up additional rooms.” Schonfeld Op. Report at ¶634. While it is unclear what this statement has to do with the claimed “network interface, to the extent Dr. Schonfeld is relying on the cited disclosure in the SA-2 and SA-3 Amplifier Guide for the ability of the SA-2 and SA-3 Amplifier products to use the Bose link communication protocol, such communication protocol is not utilized when the SA-2 and SA-3 Amplifier products are connected to the multi-room interface of a Bose Lifestyle 50 System because the Bose Lifestyle 50 System did not utilize the Bose link communication protocol and thus the multi-room interface was not a Bose link enabled media center, as explained above.

823. Lastly, Dr. Schonfeld cites to disclosure in the “Understanding Bose link” document. See, e.g., Schonfeld Op. Report at ¶635 (citing at BOSE_SUB-0000594-601 at 595-597). As explained above, however, there is no evidence that the earlier-developed Bose Lifestyle system utilized the later-developed Bose link communication protocol and it is my opinion that

1 the Bose Lifestyle 50 system did not utilize and was not compatible with the Bose link
2 communication protocol.

3 **5. The Bose Lifestyle 50 System Did Not Meet Limitation 1.2**

4 824. Limitation 1.2 of claim 1 of the '885 patent requires the "first zone player" to have
5 "one or more processors."

6 825. As an initial matter, it is not clear what device in the Bose Lifestyle 50 System Dr.
7 Schonfeld is alleging to be the claimed "first zone player" or what component(s) of such device
8 he is alleging to be the claimed "one or more processors." *See* Schonfeld Op. Report at ¶¶637-
9 639. For these reasons alone, Dr. Schonfeld has failed to prove that the Bose Lifestyle 50 System
10 discloses the "one or more processors" of limitation 1.2.

11 826. Moreover, to the extent Dr. Schonfeld is arguing that a Jewel Cube speaker is the
12 "first zone player," there is no evidence teaching or suggesting that a Jewel Cube speaker has a
13 processor. To the contrary, as explained above, the evidence shows that a Jewel Cube speaker is
14 a passive speaker that is hard-wired to an Acoustimass module of a Bose Lifestyle 50 System and
15 simply outputs audio in the form of sound once an analog signal is received via an audio cable.
16 *See* BOSE_SUB-0000001-55 at 7, 11. Thus, it is my opinion that a Jewel Cube speaker does not
17 have "one or more processors."

18 827. Further, to support his assertion that the Bose Lifestyle 50 System discloses
19 limitation 1.2 of claim 1 of the '885 Patent, Dr. Schonfeld also cites to internal Bose documents
20 related to the Bose FreeSpace System. *See* Schonfeld Op. Report at ¶638. As explained above,
21 however, there is no disclosure in the Bose FreeSpace materials cited by Dr. Schonfeld teaching
22 or suggesting that the Bose FreeSpace System is related to or somehow compatible with the Bose
23 Lifestyle 50 System. To the contrary, based on the materials I have reviewed, it is my opinion that
24 the Bose FreeSpace product and the Bose Lifestyle 50 System are not related or compatible.
25 Instead, the systems are alternatives for distributing audio from a central location to one or more
26 rooms or zones via an audio cable, albeit with very different capabilities. Moreover, Dr. Schonfeld
27 has not even alleged, let alone explained how or why the Bose FreeSpace product would be
28 combined with the Bose Lifestyle 50 System and/or that such a combination was contemplated or

1 actually made at a date prior to the December 21, 2005 invention date and/or the September 12,
2 2006 priority date of the '885 Patent.

3 828. Regardless, the DSPs referenced in these Bose FreeSpace documents appear to
4 reside in the centralized E4 unit itself and not in the passive speakers to which the E4 unit
5 distributes audio for playback. *See* BOSE_SUB-0000150-156 at 150; BOSE_SUB-0000157.
6 Thus, to the extent Dr. Schonfeld is asserting that the passive speakers to which the E4 unit
7 distributes audio for playback are “zone players,” the Bose FreeSpace documents do not disclose
8 that such passive speakers have “one or more processors.”

9 **6. The Bose Lifestyle 50 System Did Not Meet Limitation 1.3**

10 829. Limitation 1.3 of claim 1 of the '885 patent requires the “first zone player” to have
11 “a non-transitory computer-readable medium.”

12 830. As an initial matter, it is not clear what device in the Bose Lifestyle 50 System Dr.
13 Schonfeld is alleging to be the claimed “first zone player” or what component(s) of such device
14 he is alleging to be the claimed “non-transitory computer-readable medium.” *See* Schonfeld Op.
15 Report at ¶¶640-641. For these reasons alone, Dr. Schonfeld has failed to prove that the Bose
16 Lifestyle 50 System includes a “zone player” with a “non-transitory computer-readable medium.”

17 831. Moreover, to the extent Dr. Schonfeld is arguing that a Jewel Cube speaker is the
18 “first zone player,” there is no evidence teaching or suggesting that a Jewel Cube speaker has a
19 non-transitory computer-readable medium. To the contrary, as explained above, the evidence
20 shows that a Jewel Cube speaker is a passive speaker that is hard-wired to an Acoustimass module
21 of a Bose Lifestyle 50 System and simply outputs audio in the form of sound once an analog signal
22 is received via an audio cable. *See* BOSE_SUB-0000001-55 at 7, 11. Thus, it is my opinion that
23 a Jewel Cube speaker does not have “a non-transitory computer-readable medium.”

24 **7. The Bose Lifestyle 50 System Did Not Meet Limitation 1.4**

25 832. Limitation 1.4 of claim 1 of the '885 patent requires the “first zone player” to have
26 “program instructions stored on the non-transitory computer-readable medium that, when executed
27 by the one or more processors, cause the first zone player to perform functions”

28 833. As an initial matter, it is not clear what device in the Bose Lifestyle 50 System Dr.

1 Schonfeld is alleging to be the claimed “first zone player” or what he is alleging to be the claimed
2 “program instructions.” *See* Schonfeld Op. Report at ¶¶642-643. For these reasons alone, Dr.
3 Schonfeld has failed to prove that the Bose Lifestyle 50 System includes a “zone player” with a
4 “program instructions stored on the non-transitory computer-readable medium that, when executed
5 by the one or more processors, cause the first zone player to perform functions”

6 834. Moreover, to the extent Dr. Schonfeld is arguing that a Jewel Cube speaker is the
7 “first zone player,” there is no evidence teaching or suggesting that a Jewel Cube speaker has
8 “program instructions stored on the non-transitory computer-readable medium that, when executed
9 by the one or more processors, cause the first zone player to perform functions” To the
10 contrary, as explained above, the evidence shows that a Jewel Cube speaker is a passive speaker
11 that is hard-wired to an Acoustimass module of a Bose Lifestyle 50 System and simply outputs
12 audio in the form of sound once an analog signal is received via an audio cable. *See* BOSE_SUB-
13 0000001-55 at 7, 11. Thus, it is my opinion that a Jewel Cube speaker does not have “program
14 instructions stored on the non-transitory computer-readable medium that, when executed by the
15 one or more processors, cause the first zone player to perform functions.”

16 **8. The Bose Lifestyle 50 System Did Not Meet Limitations 1.5 / 1.6**

17 835. Limitations 1.5 and 1.6 of claim 1 of the '885 patent require the “first zone player”
18 to be programmed with the capability for, “while operating in a standalone mode in which the first
19 zone player is configured to play back media individually in a networked media playback system
20 comprising the first zone player and at least two other zone players,” “receiving, from a network
21 device over a data network, a first indication that the first zone player has been added to a first
22 zone scene comprising a first predefined grouping of zone players including at least the first zone
23 player and a second zone player that are to be configured for synchronous playback of media when
24 the first zone scene is invoked.”

25 836. As an initial matter, Dr. Schonfeld’s opinion that the Bose Lifestyle 50 System
26 meets limitations 1.5 and 1.6 is not based on any functionality of the actual Bose Lifestyle 50
27 System itself. *See* Schonfeld Op. Report at ¶¶650-653. Instead, Dr. Schonfeld relies exclusively
28 on functionality related to (i) setting up SA-2 and/or SA-3 Amplifiers in “additional rooms” using

1 Bose link technology of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment
2 system” (*id.* at ¶652 (citing BOSE_SUB-0000274-360 at 297 and BOSE_SUB-0000361-448 at
3 385-386)) – not a Bose Lifestyle 50 System that does not have Bose link capability and (ii) the
4 Bose link communication protocol (*id.* at ¶653 (citing BOSE_SUB-0000594-601 at 595-596)) –
5 which, as explained above, is not utilized by the Bose Lifestyle 50 System. For these reasons
6 alone, Dr. Schonfeld has failed to prove that the actual Bose Lifestyle 50 System discloses
7 limitation 1.6.

8 837. Additionally, it is not clear what Dr. Schonfeld is alleging to be the claimed “first
9 zone player,” “second zone player,” “network device,” “first zone scene,” or “first indication.”
10 *See* Schonfeld Op. Report at ¶¶650-653. Thus, for these reasons alone, Dr. Schonfeld has failed
11 to prove that any system, let alone the actual Bose Lifestyle 50 System, discloses limitation 1.6.

12 838. Regardless, for at least the reasons below, neither the actual Bose Lifestyle 50
13 System nor Dr. Schonfeld’s alleged Bose Lifestyle 50 System discloses limitation 1.6.²¹

14 Actual Bose Lifestyle 50 System

15 839. In my opinion, the actual Bose Lifestyle 50 System does not disclose limitation 1.6
16 for at least the following reasons.

17 840. First, as explained above, the evidence I have reviewed establishes that neither the
18 Acoustimass modules of the Bose Lifestyle 50 System nor the SA-2 and SA-3 amplifiers that
19 appear to have been compatible with the Bose Lifestyle 50 System (each of which may be referred
20 to herein as a “Lifestyle player”) had any capability to be added to a “zone scene” comprising a
21 “predefined grouping of zone players . . . that are to be configured for synchronous playback of
22 media when the . . . zone scene is invoked,” and for this reason alone, a Lifestyle player did not
23 have the capability to “receiv[e], from a network device over a data network, a first indication that
24 the [Lifestyle player] has been added to a first zone scene comprising a first predefined grouping
25 of [Lifestyle players] including at least the [recipient Lifestyle player] and a second [Lifestyle
26

27 ²¹ Note that while I have separately addressed the shortcomings of the actual Bose Lifestyle 50 System and
28 Dr. Schonfeld’s alleged Bose Lifestyle 50 System with respect to limitations 1.5-1.10, it should be
understood that these shortcomings can be considered together depending on how Dr. Schonfeld intends on
combining the various Bose products upon which he relies, which is currently unclear.

1 player] that are to be configured for synchronous playback of media when the first zone scene is
2 invoked.”

3 841. Second, even setting aside the fundamental differences between a group of
4 Lifestyle players having a “shared source” of audio and a “zone scene,” the Bose Lifestyle 50
5 System evidence that I have reviewed establishes that Lifestyle players did not have the capability
6 to “receiv[e], from a network device over a data network, a first indication that the [Lifestyle
7 player] has been added to” a group of Lifestyle players having a “shared source” of audio. Instead,
8 based on the evidence I have reviewed, when a user set up a “shared source” of audio for multiple
9 Lifestyle players using the Personal music center of the Bose Lifestyle 50 System, the Personal
10 music center would transmit information to the centralized multi-room interface (not to the
11 Lifestyle players), which would cause the multi-room interface to configure itself to distribute the
12 same audio from the same audio source to each of the rooms so that the same audio could be played
13 back simultaneously via the Lifestyle players. *See, e.g.* BOSE_SUB-0000001-55 at 6, 12, 17, 19,
14 44-45; BOSE_SUB-0000684-687 at 684-685. In other words, a Lifestyle player would not receive
15 any information from the Personal music center but instead would receive audio from the multi-
16 room interface but audio alone is not an indication that the Lifestyle player has been added to a
17 group of Lifestyle players, let alone a “zone scene.” Moreover, as explained above, a POSITA
18 would not consider the multi-room interface and the Lifestyle players to be operating on a data
19 network because the hard-wired connection therebetween is not a medium that interconnects
20 devices, enabling them to send digital data packets to and receive digital data packets from each
21 other. Thus, even if an indication that the Lifestyle player has been added to such a group was
22 sent from the multi-room interface to a Lifestyle player (which is not the case), such an indication
23 would not be received over a data network, as required by limitation 1.6.

24 Dr. Schonfeld’s alleged Bose Lifestyle 50 System

25 842. In my opinion, Dr. Schonfeld’s alleged Bose Lifestyle 50 System does not disclose
26 limitation 1.6 for at least the following reasons.

27 843. First, as explained above, the evidence I have reviewed establishes that in a Bose
28 link configuration of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment

1 system,” a Lifestyle player did not have any capability to be added to a “zone scene” comprising
2 a “predefined grouping of zone players . . . that are to be configured for synchronous playback of
3 media when the . . . zone scene is invoked,” and for this reason alone, a Lifestyle player did not
4 have the capability to “receiv[e], from a network device over a data network, a first indication that
5 the [Lifestyle player] has been added to a first zone scene comprising a first predefined grouping
6 of [Lifestyle players] including at least the [recipient Lifestyle player] and a second [Lifestyle
7 player] that are to be configured for synchronous playback of media when the first zone scene is
8 invoked.”

9 844. Second, in a Bose link configuration of a Bose “Lifestyle 18 series II, 28 series II,
10 38 or 48 home entertainment system,” the evidence I have reviewed establishes that a Lifestyle
11 player did not have any capability for “receiving, from a network device over a data network, a
12 first indication that the [Lifestyle player] has been added to” any sort of group of Lifestyle players
13 for synchronous playback, let alone a “first zone scene.”

14 845. Despite the clear absence of this functional capability required by limitation 1.8,
15 Dr. Schonfeld opines that the Bose Lifestyle 50 System discloses this functionality. However,
16 nothing in Dr. Schonfeld’s Opening Report alters my opinion that the Lifestyle players did not
17 have the functional capability required by limitation 1.8.

18 846. For instance, although unclear, at paragraph 653 of his Opening Report, Dr.
19 Schonfeld appears to assert that the “indication” of limitation 1.6 is disclosed by the Bose Link
20 communication protocol based on a theory that “the Bose Link communication protocol allows for
21 an indication that [Lifestyle players in] additional rooms . . . have been added to the media center.”
22 *See* Schonfeld Op. Report at ¶653. I disagree. Instead, in the “Understanding Bose link” document
23 cited by Dr. Schonfeld, the only information transmitted from a Bose link enabled media center to
24 a Lifestyle player that is a Bose link expansion product (e.g., an SA-2 or SA-3 Amplifier) is
25 “on/off, volume and source commands along with audio.” *See* BOSE_SUB-0000594-601 at 595.
26 The “Understanding Bose link” document also states that “[e]ach time a source change or on/off
27 command is sent, the expansion product sends information back to the media center letting it know
28 that it is still on (or off) and in the same room.” *Id.* These disclosures are consistent with Dr.

1 Schonfeld's characterization: "The Bose Link connection is essentially a conversation between the
2 media center and the expansion device. The media center sends on/off, volume and source change
3 commands along with audio to the zones. The zones then respond by sending information back to
4 the media center to let it know that the zone is still active." Schonfeld Op. Report at ¶653.
5 However, none of this information that is allegedly exchanged between a Bose link enabled media
6 center and a Lifestyle player that is a Bose link expansion product amounts to an "indication" that
7 the Lifestyle player has been added to any sort of group for synchronous playback, let alone an
8 "indication" that a Lifestyle player has been added to a "zone scene."

9 847. Moreover, to the extent that Dr. Schonfeld is asserting that the alleged "indication"
10 is sent from the Lifestyle player to the Bose link enabled media center, such a theory would fail
11 for the additional reason that the claim requires the "indication" to be received by the "first zone
12 player." The Bose link enabled media center cannot possibly be the "first zone player" because
13 there is only a single Bose link enabled media center in any given system and thus a Bose link
14 enabled media center could not be added to a "zone scene" with another Bose link enabled media
15 center. *See, e.g.,* BOSE_SUB-0000361-448 at 384 (illustrating SA-2 and SA-3 amplifiers
16 connected to a single Bose link enabled media center).

17 848. I also note that at paragraph 653, Dr. Schonfeld also asserts that "[i]mportantly, ...
18 the media center will not acknowledge commands from any zone that is not targeted or invoked."
19 *See* Schonfeld Op. Report at ¶653. I fail to see how this statement is relevant to limitation 1.6 as
20 it has nothing to do with a Lifestyle player receiving an "indication" that the Lifestyle player has
21 been added to a "zone scene."

22 **9. The Bose Lifestyle 50 System Did Not Meet Limitations 1.5 / 1.7**

23 849. Limitations 1.5 and 1.7 of claim 1 of the '885 patent require the "first zone player"
24 to be programmed with the capability for, "while operating in a standalone mode in which the first
25 zone player is configured to play back media individually in a networked media playback system
26 comprising the first zone player and at least two other zone players," "(ii) receiving, from the
27 network device over the data network, a second indication that the first zone player has been added
28 to a second zone scene comprising a second predefined grouping of zone players including at least

1 the first zone player and a third zone player that are to be configured for synchronous playback of
2 media when the second zone scene is invoked, wherein the second zone player is different than
3 the third zone player.”

4 850. As an initial matter, Dr. Schonfeld’s opinion that the Bose Lifestyle 50 System
5 meets limitations 1.5 and 1.7 is not based on any functionality of the actual Bose Lifestyle 50
6 System itself. *See* Schonfeld Op. Report at ¶¶654-656. Instead, after incorporating his discussion
7 of limitation 1.6 (which also is not based on any functionality of the actual Bose Lifestyle 50
8 System itself, as explained above), Dr. Schonfeld relies exclusively on functionality related to the
9 Bose link communication protocol, which, as explained above, is not utilized by the Bose Lifestyle
10 50 System. *Id.* at ¶656 (citing BOSE_SUB-0000594-601 at 597). For these reasons alone, Dr.
11 Schonfeld has failed to prove that the actual Bose Lifestyle 50 System discloses limitation 1.7.

12 851. Additionally, it is not clear what Dr. Schonfeld is alleging to be the claimed “first
13 zone player,” “second zone player,” “third zone player,” “network device,” “first zone scene,”
14 “second zone scene,” or “second indication.” *See* Schonfeld Op. Report at ¶¶650-656. Thus, for
15 these reasons alone, Dr. Schonfeld has failed to prove that any system, let alone the actual Bose
16 Lifestyle 50 System, discloses limitation 1.7.

17 852. Regardless, for at least the reasons below, neither the actual Bose Lifestyle 50
18 System nor Dr. Schonfeld’s alleged Bose Lifestyle 50 System discloses limitation 1.7.

19 Actual Bose Lifestyle 50 System

20 853. In my opinion, the actual Bose Lifestyle 50 System does not disclose limitation 1.7
21 for at least the following reasons.

22 854. First, as I explained above, the evidence I have reviewed establishes that neither the
23 Acoustimass modules of the Bose Lifestyle 50 System nor the SA-2 and SA-3 amplifiers that
24 appear to have been compatible with the Bose Lifestyle 50 System (each of which may be referred
25 to herein as a “Lifestyle player”) had any capability to be added to a “zone scene” comprising a
26 “predefined grouping of zone players . . . that are to be configured for synchronous playback of
27 media when the . . . zone scene is invoked,” and for this reason alone, a Lifestyle player did not
28 have the capability to “receiv[e], from the network device over the data network, a second

1 indication that the [Lifestyle player] has been added to a second zone scene comprising a second
2 predefined grouping of [Lifestyle players] including at least the [recipient Lifestyle player] and a
3 third [Lifestyle player] that are to be configured for synchronous playback of media when the
4 second zone scene is invoked,” where the second Lifestyle player included in the “first zone scene”
5 is different from the third Lifestyle player included in this “second zone scene.”

6 855. Second, a Lifestyle player did not have the capability to receive a “second
7 indication that [it] has been added to a second zone scene comprising a second predefined grouping
8 of [Lifestyle players]” while remaining a member of a “first zone scene comprising a first
9 predefined grouping of [Lifestyle players]” that is still in existence such that both the “first zone
10 scene” and the “second zone scene” are thereafter both available to be “selected for invocation,”
11 which is required by limitations 1.5 / 1.7 when viewed in combination with the other surrounding
12 claim language and serves as an additional reason why a Lifestyle player did not meet limitations
13 1.5 / 1.7 of the '885 Patent. Indeed, even setting aside the fundamental differences between a
14 group of Lifestyle players having a “shared source” of audio and a “zone scene,” a Lifestyle player
15 could not have been a member of multiple different groups of Lifestyle players each having a
16 “shared source” of audio that are both in existence at the same time and available to be “selected
17 for invocation.” To the contrary, as explained above, the Bose Lifestyle 50 System evidence I
18 have reviewed establishes that a Lifestyle player could only be a member of one group of Lifestyle
19 players having a “shared source” of audio that was in existence at any given time, and that the only
20 way a Lifestyle player in a first group of Lifestyle players having a “shared source” of audio could
21 have been added to a second group of Lifestyle players having a “shared source” of audio was to
22 destroy the first group by changing the audio source for the Lifestyle player to match the “shared
23 source” of audio for the second group. *See, e.g.,* BOSE_SUB-0000001-55 at 43-45 (explaining
24 how to use ROOM and HOUSE buttons to set up an audio source for one or more rooms).

25 856. Third, even setting aside the fundamental differences between a group of Lifestyle
26 players having a “shared source” of audio and a “zone scene” and the inability of a Lifestyle player
27 to be a member of multiple different groups of Lifestyle players each having a “shared source” of
28 audio that are both in existence at the same time and available to be “selected for invocation,” the

1 Bose Lifestyle 50 System evidence that I have reviewed establishes that Lifestyle players did not
2 have the capability to “receiv[e], from the network device over the data network, a second
3 indication that the [Lifestyle player] has been added to” a group of Lifestyle players having a
4 “shared source” of audio. The reasoning is the same as that explained above with respect to
5 “receiving” the “first indication” of limitation 1.6.

6 Dr. Schonfeld’s alleged Bose Lifestyle 50 System

7 857. In my opinion, Dr. Schonfeld’s alleged Bose Lifestyle 50 System does not disclose
8 limitation 1.7 for at least the following reasons.

9 858. First, as explained above, the evidence I have reviewed establishes that in a Bose
10 link configuration of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment
11 system,” a Lifestyle player did not have any capability to be added to a “zone scene” comprising
12 a “predefined grouping of zone players . . . that are to be configured for synchronous playback of
13 media when the . . . zone scene is invoked,” and for this reason alone, a Lifestyle player did not
14 have the capability to “receiv[e], from the network device over the data network, a second
15 indication that the [Lifestyle player] has been added to a second zone scene comprising a second
16 predefined grouping of [Lifestyle players] including at least the [recipient Lifestyle player] and a
17 third [Lifestyle player] that are to be configured for synchronous playback of media when the
18 second zone scene is invoked,” where the second Lifestyle player included in the “first zone scene”
19 is different from the third Lifestyle player included in this “second zone scene.”

20 859. Second, the evidence I have reviewed establishes that in a Bose link configuration
21 of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system,” a Lifestyle
22 player did not have the capability to receive a “second indication that [it] has been added to a
23 second zone scene comprising a second predefined grouping of [Lifestyle players]” while
24 remaining a member of a “first zone scene comprising a first predefined grouping of [Lifestyle
25 players]” that is still in existence such that both the “first zone scene” and the “second zone scene”
26 are thereafter both available to be “selected for invocation,” which is required by limitations 1.5 /
27 1.7 when viewed in combination with the other surrounding claim language and serves as an
28 additional reason why a Lifestyle player did not meet limitations 1.5 / 1.7 of the ’885 Patent.

860. Third, in a Bose link configuration of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system,” the evidence I have reviewed establishes that a Lifestyle player did not have any capability for “receiving, from the network device over the data network, a second indication that the [Lifestyle player] has been added to” any sort of group of Lifestyle players for synchronous playback, let alone a “second zone scene.” The reasoning is the same as that explained above with respect to “receiving” the “first indication” of limitation 1.6.

10. The Bose Lifestyle 50 System Did Not Meet Limitation 1.8

861. Limitation 1.8 of claim 1 of the ’885 patent requires a “first zone player” that is programmed with the capability for “after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation.”

862. As an initial matter, Dr. Schonfeld’s opinion regarding limitation 1.8 relies in part on functionality that is not related to the actual Bose Lifestyle 50 System itself. Specifically, Dr. Schonfeld relies on functionality related to setting up SA-2 and/or SA-3 Amplifiers in “additional rooms” using Bose link technology of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system” – not a Bose Lifestyle 50 System that does not have Bose link capability. *See* Schonfeld Op. Report at ¶676 (citing BOSE_SUB-0000361-448 at 384-385). For this reason alone, Dr. Schonfeld has failed to prove that the actual Bose Lifestyle 50 System discloses limitation 1.8.

863. Additionally, while Dr. Schonfeld’s opinion regarding limitation 1.8 relies on “zone scenes” that are allegedly created by setting up SA-2 and/or SA-3 Amplifiers in “additional rooms” using Bose link technology of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system” (*id.* at ¶676 (citing BOSE_SUB-0000361-448 at 384-385)), Dr. Schonfeld relies on the Personal music center of the Bose Lifestyle 50 System to allegedly invoke such “zone scenes” and states that “[a]t that time ... the Bose Link communication protocol is used to communicate with the newly added zone to bring it ‘online’” (*id.* at ¶679). However, as explained above, the Personal Music Center of the Bose Lifestyle 50 System does not utilize the Bose link communication protocol and cannot be used to control SA-2 and/or SA-3 Amplifiers that are set

up in “additional rooms” using Bose link technology of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system.” Instead, as disclosed in the “Setup guidelines for additional rooms” section of the SA-2 and SA-3 Amplifier Guide, “additional rooms” that set up using Bose link technology can be controlled with a RC-18S Remote Control, RC-38S Remote Control, or a Personal Music Center II – not the Personal Music Center of the Bose Lifestyle 50 System. *See* BOSE_SUB-0000361-448 at 384. Moreover, these Bose link controllers can only be set up to control a single room at a time by setting the “room code” of the remote control to match the “room code” of the SA-2 or SA-3 Amplifier, and each room needs its own Bose link controller. *Id.* at 384-386; *see also* BOSE_SUB-0000594-601 at 595 (“Both the expansion product and the remote must be configured to operate on the same room.”). For these reasons alone, Dr. Schonfeld has failed to prove that any system, let alone the Bose Lifestyle 50 System, discloses limitation 1.8.

864. Moreover, it is not clear what Dr. Schonfeld is alleging to be the claimed “first zone player,” “first and second indications,” and “first and second zone scenes.” *See* Schonfeld Op. Report at ¶¶675-679. Thus, for these reasons alone, Dr. Schonfeld has failed to prove that any system, let alone the Bose Lifestyle 50 System, discloses limitation 1.8.

865. Regardless, for at least the reasons below, neither the actual Bose Lifestyle 50 System nor Dr. Schonfeld’s alleged Bose Lifestyle 50 System discloses limitation 1.8.

Actual Bose Lifestyle 50 System

866. In my opinion, the actual Bose Lifestyle 50 System does not disclose limitation 1.8 for at least the following reasons.

867. First, as I explained above, the Bose Lifestyle 50 System evidence I have reviewed establishes that Lifestyle players did not have any “zone scenes” capability, let alone any capability to receive the claimed “first indication that the first zone player has been added to a first zone scene” or the claimed “second indication that the first zone player has been added to a second zone scene.” For these same reasons, the Lifestyle players fail to meet both the “*after receiving the first and second indications*, continuing to operate in the standalone mode . . .” aspect of limitation 1.8 and the “continuing to operate in the standalone mode *until a given one of the first and second zone scenes has been selected for invocation*” aspect of limitation 1.8.

1 868. Second, while a Lifestyle player in the Bose Lifestyle 50 System did not have any
2 capability to change its own operating mode for audio playback because the configuration of the
3 multi-room interface was exclusively responsible for the simultaneous playback of audio on
4 multiple Lifestyle players, a Lifestyle player would not have been available to “play back media
5 individually” after being added to a group of Lifestyle players having a “shared source” of audio
6 without first destroying that group, which is contrary to the “standalone mode” limitation.

7 Dr. Schonfeld’s alleged Bose Lifestyle 50 System

8 869. In my opinion, Dr. Schonfeld’s alleged Bose Lifestyle 50 System does not disclose
9 limitation 1.8 for at least the following reasons.

10 870. First, as explained above, the evidence I have reviewed establishes that in a Bose
11 link configuration of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment
12 system,” Lifestyle players did not have any “zone scenes” capability, let alone any capability to
13 receive the claimed “first indication that the first zone player has been added to a first zone scene”
14 or the claimed “second indication that the first zone player has been added to a second zone scene.”
15 For these same reasons, the Lifestyle players fail to meet both the “*after receiving the first and*
16 *second indications*, continuing to operate in the standalone mode . . .” aspect of limitation 1.8 and
17 the “continuing to operate in the standalone mode *until a given one of the first and second zone*
18 *scenes has been selected for invocation*” aspect of limitation 1.8.

19 871. Second, the evidence I have reviewed establishes that in a Bose link configuration
20 of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system,” while a
21 Lifestyle player did not have any capability to change its own operating mode for audio playback,
22 a Lifestyle player would not have been available to “play back media individually” after being
23 added to a group of Lifestyle players having a shared “stream” of audio without first destroying
24 that group, which is contrary to the “standalone mode” limitation.

25 872. Despite the clear absence of the functional capability required by limitation 1.8, Dr.
26 Schonfeld opines in paragraph 275 of his Opening Report that the Bose Lifestyle 50 System
27 discloses claim limitation 1.8 and then sets forth various theories in an attempt to support this
28 opinion. *See* Schonfeld Op. Report at ¶¶ 675-680. However, nothing in Dr. Schonfeld’s Opening

1 Report alters my opinion that the Lifestyle players in the Bose Lifestyle 50 System did not have
2 the functional capability required by limitation 1.8.

3 873. For instance, although unclear, Dr. Schonfeld appears to be suggesting that multiple
4 Bose link enabled Lifestyle players (e.g., SA-2 or SA-3 amplifiers) in a Bose link configuration
5 have the functional capability of limitation 1.8 because they can be “offline” after they are
6 connected to a Bose link enabled media center and then brought “online” when a user invokes the
7 multiple Bose link enabled Lifestyle players using a remote control. *See* Schonfeld Op. Report at
8 ¶¶ 676-679. I disagree. As an initial matter, I have reviewed the materials cited by Dr. Schonfeld
9 and I fail to see any discussion of Lifestyle layers being “offline” and then being brought “online.”
10 As such, it is not clear what functionality of the Bose Lifestyle 50 System that Dr. Sconfeld is
11 referring to. Regardless, contrary to Dr. Schonfeld’s suggestion, a speaker that is “offline” is not
12 “continuing to operate in the standalone mode.”

13 874. Moreover, although unclear, to the extent Dr. Schonfeld is relying on his “offline”
14 argument in the same manner that he relied on his “powered-off” theory for Squeezebox, it fails
15 for the same reasons as I explained above in connection with Squeezebox.

16 875. Further, as explained above, multiple SA-2 or SA-3 amplifiers in different rooms
17 that are hardwired to a Bose link enabled Lifestyle media center are not capable of being “selected
18 for invocation” as a group, which is a required aspect of limitation 1.8. Instead, the evidence I
19 reviewed indicates that each such SA-2 or SA-3 amplifier could only be controlled by its own
20 dedicated Bose link enabled remote control that was set to the same room code as the SA-2 or SA-
21 3 amplifier. BOSE_SUB-0000361-448 at 384-386 (“Remote controls for other rooms must be set
22 to the same house code as the main room remote, but each remote must be set to a different room
23 code. ... The Lifestyle® amplifier and its remote control must be set to the same room code.”).
24 Because each dedicated remote control is coded to only a *single* amplifier, there is no remote
25 control that enables the selection of a group of *multiple* amplifiers for invocation. And I have seen
26 no evidence that multiple SA-2 or SA-3 amplifiers that are hardwired to a Bose link enabled
27 Lifestyle media center could be controlled together with a single Bose link enabled remote control.
28 Notably, as explained above, based on the evidence I reviewed, the Personal music center of the

1 Bose Lifestyle 50 System was not Bose link enabled and therefore could not be used to control
2 multiple SA-2 or SA-3 amplifiers that are hardwired to a Bose link enabled Lifestyle media center.
3 To the contrary, the Personal music center and multi-room interface of the Bose Lifestyle 50
4 System communicate using a proprietary radio frequency communication protocol that was
5 specifically developed for the Bose Lifestyle 50 System and that is “not compatible” with protocols
6 used in other Bose systems. *See* BOSE_SUB-0000663-683 at 666.

7 **11. The Bose Lifestyle 50 System Did Not Meet Limitation 1.9**

8 876. Limitation 1.9 of claim 1 of the '885 patent requires a “first zone player” that is
9 programmed with the capability for “after the given one of the first and second zone scenes has
10 been selected for invocation, receiving, from the network device over the data network, an
11 instruction to operate in accordance with a given one of the first and second zone scenes
12 respectively comprising a given one of the first and second predefined groupings of zone players.”

13 877. As an initial matter, Dr. Schonfeld’s opinion regarding limitation 1.9 relies in part
14 on functionality that is not related to the actual Bose Lifestyle 50 System itself. Specifically, Dr.
15 Schonfeld relies on functionality related the Bose link communication protocol, which, as
16 explained above, is not utilized by the Bose Lifestyle 50 System. *See* Schonfeld Op. Report at
17 ¶699 (citing BOSE_SUB-0000594-601 at 595-597). For this reason alone, Dr. Schonfeld has
18 failed to prove that the actual Bose Lifestyle 50 System discloses limitation 1.9.

19 878. Additionally, as with limitation 1.8, Dr. Schonfeld’s opinions regarding limitation
20 1.9 rely on using the Personal music center of the Bose Lifestyle 50 System to allegedly invoke a
21 “zone scene” using the Bose link communication protocol. *See* Schonfeld Op. Report at ¶698-
22 699. However, as explained above, the Personal Music Center of the Bose Lifestyle 50 System
23 does not utilize the Bose link communication protocol and cannot be used to control SA-2 and/or
24 SA-3 Amplifiers that are set up in “additional rooms” using Bose link technology of a Bose
25 “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system.” Instead, as disclosed in
26 the “Setup guidelines for additional rooms” section of the SA-2 and SA-3 Amplifier Guide,
27 “additional rooms” that set up using Bose link technology can be controlled with a RC-18S Remote
28 Control, RC-38S Remote Control, or a Personal Music Center II – not the Personal Music Center

1 of the Bose Lifestyle 50 System. *See* BOSE_SUB-0000361-448 at 384. Notably, RC-18S Remote
2 Control, RC-38S Remote Control, and Personal Music Center II can only be set up to control a
3 single room at a time by setting the “room code” of the remote control to match the “room code”
4 of the SA-2 or SA-3 Amplifier, and each room needs its own Bose link controller. *Id.* at 384-386;
5 *see also* BOSE_SUB-0000594-601 at 595 (“Both the expansion product and the remote must be
6 configured to operate on the same room.”). For these reasons alone, Dr. Schonfeld has failed to
7 prove that any system, let alone the Bose Lifestyle 50 System, discloses limitation 1.9.

8 879. Moreover, it is not clear what Dr. Schonfeld is alleging to be the claimed “first zone
9 player,” “first and second zone scenes,” “network device,” or “instruction.” *See* Schonfeld Op.
10 Report at ¶¶697-699. Thus, for these reasons alone, Dr. Schonfeld has failed to prove that any
11 system, let alone the Bose Lifestyle 50 System, discloses limitation 1.9.

12 880. Regardless, for at least the reasons below, neither the actual Bose Lifestyle 50
13 System nor Dr. Schonfeld’s alleged Bose Lifestyle 50 System discloses limitation 1.9.

14 Actual Bose Lifestyle 50 System

15 881. In my opinion, the actual Bose Lifestyle 50 System does not disclose limitation 1.9
16 for at least the following reasons.

17 882. First, as explained above, the evidence I have reviewed establishes that Lifestyle
18 players in the Bose Lifestyle 50 System did not have “zone scenes” capability, and for this reason
19 alone, a Lifestyle player did not have the capability to “after the given one of the first and second
20 zone scenes has been selected for invocation, receiv[e], from the network device over the data
21 network, an instruction to operate in accordance with a given one of the first and second zone
22 scenes respectively comprising a given one of the first and second predefined groupings of
23 [Lifestyle players].”

24 883. Second, even setting aside the other fundamental differences between a group of
25 Lifestyle players having a “shared source” of audio and a “zone scene,” the evidence I have
26 reviewed establishes that a group of Lifestyle players having a “shared source” of audio would
27 have never been “selected for invocation” by a user after the time when the group was created,
28 which is required by limitation 1.9 when viewed in combination with limitations 1.5-1.8 and serves

1 as an additional reason why the Lifestyle players do not meet limitation 1.9 of the '885 Patent.

2 884. Third, again setting aside the other fundamental differences between a group of
3 Lifestyle players having a “shared source” of audio and a “zone scene,” the evidence I have
4 reviewed establishes that a Lifestyle player did not have the capability to receive “an instruction
5 to operate in accordance with” a group of Lifestyle players having a “shared source” of audio that
6 had been “selected for invocation” by a user.

7 885. Despite the clear absence of this functional capability required by limitation 1.9,
8 Dr. Schonfeld opines that the Bose Lifestyle 50 System discloses this functionality. However,
9 nothing in Dr. Schonfeld’s Opening Report alters my opinion that the Lifestyle players did not
10 have the functional capability required by limitation 1.9.

11 886. For instance, to support his opinion that the Bose materials disclose the “instruction
12 to operate in accordance with a given one of the first and second zone scenes” of limitation 1.9,
13 Dr. Schonfeld cites disclosure about the Personal Music Center of the Bose Lifestyle 50 System
14 and states that “a user may select a synchronization group for playback using the Room button [of
15 the Personal Music Center], and use the playback controls See Schonfeld Op. Report at ¶698
16 (citing BOSE_SUB-0000001-55 at 43). Although, unclear, Dr. Schonfeld appears to be suggesting
17 that the Personal Music Center discloses the “network device” of limitation 1.9 and that, in
18 response to a selection made using the Room button, the Personal Music Center transmits the
19 claimed “instruction” to an Acoustimass module or an SA-2 or SA-3 Amplifier in “a
20 synchronization group” to cause the Acoustimass module or SA-2 or SA-3 Amplifier to operate in
21 accordance with the “synchronization group.”²² As an initial matter, I have seen no evidence that
22 the Personal Music Center transmits any sort of information in response to a user selecting one or
23 more rooms using the Room or House button of the Personal Music Center. Dr. Schonfeld appears
24 to agree with that as he points to “us[ing] the playback controls” – not the Room button – to cause
25 Bose LifeStyle to operate as a synchronous playback group.” *Id.*

26
27 ²² I note that there can only be one multi-room interface per Bose Lifestyle 50 System so it cannot be the
28 claimed “first zone player” of claim 1 of the '885 patent as it cannot be a member of a “zone scene” with
any other multi-room interface. See BOSE_SUB-0000001-55.

1 887. Additionally, assuming that the Personal Music Center does transmit an instruction
2 in response to a user “us[ing] the playback controls,” such as an instruction to play audio, I have
3 seen no evidence that any instruction is transmitted from the Personal Music Center to an
4 Acoustimass module or an SA-2 or SA-3 Amplifier. Instead, based on the materials I have
5 reviewed, the Personal Music Center can only transmit information to the multi-room interface of
6 the Bose Lifestyle 50 System. *See, e.g.*, BOSE_SUB-0000001-55 at 19 (“When batteries are first
7 installed in the music center; it sets up a radio-frequency link with the closest multi-room interface.
8 ... Hold the music center close to the multi-room interface. Press and hold MUTE for about 5
9 seconds until you hear a beep and then release. After about 10 seconds, the music center should
10 beep twice to confirm that the link is established.”). Thus to the extent the Personal Music Center
11 transmits an instruction to play audio on one or more selected rooms each having an Acoustimass
12 module or an SA-2 or SA-3 Amplifier, it is my understanding that the instruction would be
13 transmitted to the multi-room interface, which would then configure itself to distribute audio to
14 the one or more selected rooms via the Room A-D audio output connectors. I have seen no
15 evidence the Personal Music Center can relay or transmit such an instruction to an Acoustimass
16 module or an SA-2 or SA-3 Amplifier in one or more selected rooms.

17 888. Moreover, based on the Bose Lifestyle 50 System evidence I have reviewed, I
18 disagree that a POSITA would consider an instruction to play audio in response to a user “us[ing]
19 the playback controls” to be “instruction operate in accordance with” a group of Lifestyle players
20 having a “shared source” of audio for the additional reason that such an instruction would not
21 provide a Lifestyle player with any indication whatsoever that it was to operate as part of a group
22 of Lifestyle players having a “shared source.” This is consistent with the other evidence I have
23 reviewed showing that a Lifestyle player would have never had any awareness that it was part of
24 a group of Lifestyle players having a “shared source” because the multi-room interface was
25 exclusively responsible for the “shared source” functionality.

26 889. Further, a POSITA would understand that the “instruction to operate in accordance
27 with” the selected “zone scene” requires an instruction that causes the selected “zone scene” to
28 become “invoked” such that the group of “zone players” that is “predefined” as part of the selected

1 “zone scene” becomes activated. However, any alleged instruction in response to a user “us[ing]
2 the playback controls,” such as an instruction to play audio, would be sent after a group of Lifestyle
3 players having a “shared source” was already activated for synchronous playback, as explained
4 above.

5 890. Further yet, even if an instruction was sent from the multi-room interface to a
6 Lifestyle player (which is not the case), such an instruction would not be received over a data
7 network, as required by limitation 1.9. As explained above, a POSITA would not consider the
8 multi-room interface and the Lifestyle players to be operating on a data network because the hard-
9 wired connection therebetween is not a medium that interconnects devices, enabling them to send
10 digital data packets to and receive digital data packets from each other.

11 Dr. Schonfeld’s alleged Bose Lifestyle 50 System

12 891. In my opinion, Dr. Schonfeld’s alleged Bose Lifestyle 50 System does not disclose
13 limitation 1.9 for at least the following reasons.

14 892. First, as explained above, the evidence I have reviewed establishes that in a Bose
15 link configuration of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment
16 system,” Lifestyle players did not have any “zone scenes” capability, and for this reason alone, a
17 Lifestyle player did not have the capability to “after the given one of the first and second zone
18 scenes has been selected for invocation, receiv[e], from the network device over the data network,
19 an instruction to operate in accordance with a given one of the first and second zone scenes
20 respectively comprising a given one of the first and second predefined groupings of [Lifestyle
21 players].”

22 893. Second, setting aside the other fundamental differences between a group of
23 Lifestyle players having a shared “stream” of audio and a “zone scene,” the evidence I have
24 reviewed establishes that, in a Bose link configuration of a Bose “Lifestyle 18 series II, 28 series
25 II, 38 or 48 home entertainment system,” a group of Lifestyle players having a shared “stream” of
26 audio would have never been “selected for invocation” by a user after the time when the group
27 was created, which is required by limitation 1.9 when viewed in combination with limitations 1.5-
28 1.8 and serves as an additional reason why the Lifestyle players do not meet limitation 1.9 of the

1 '885 Patent.

2 894. Third, again setting aside the other fundamental differences between a group of
3 Lifestyle players having a shared “stream” of audio and a “zone scene,” the evidence I have
4 reviewed establishes that, in a Bose link configuration of a Bose “Lifestyle 18 series II, 28 series
5 II, 38 or 48 home entertainment system,” a Lifestyle player did not have the capability to receive
6 “an instruction to operate in accordance with” a group of Lifestyle players having a shared
7 “stream” that had been “selected for invocation” by a user.

8 895. Despite the clear absence of this functional capability required by limitation 1.9,
9 Dr. Schonfeld opines that the Bose Lifestyle 50 System discloses this functionality. However,
10 nothing in Dr. Schonfeld’s Opening Report alters my opinion that the Lifestyle players did not
11 have the functional capability required by limitation 1.9.

12 896. For instance, to support his opinion that the Bose materials disclose the “instruction
13 to operate in accordance with a given one of the first and second zone scenes” of limitation 1.9,
14 Dr. Schonfeld relies on the same “Understanding Bose link” document that he relied on for the
15 “indications” of limitations 1.6-1.7. *See* Schonfeld Op. Report at ¶699. However, the materials
16 cited by Dr. Schonfeld do not teach “an instruction to operate in accordance with” any given group,
17 let alone “a given one of the first and second zone scenes.” Instead, in the “Understanding Bose
18 link” document cited by Dr. Schonfeld, the only information transmitted from a Bose link enabled
19 media center to a Bose link expansion product (e.g., an SA-2 or SA-3 Amplifier) is “on/off, volume
20 and source commands along with audio.” *See* BOSE_SUB-0000594-601 at 595. The
21 “Understanding Bose link” document also states that “[e]ach time a source change or on/off
22 command is sent, the expansion product sends information back to the media center letting it know
23 that it is still on (or off) and in the same room.” *Id.* Contrary to Dr. Schonfeld’s assertion, none
24 of this information amounts to “an instruction to operate in accordance with” any given group, let
25 alone “a given one of the first and second zone scenes” because, based on the evidence I have
26 reviewed, none of this information would provide a Bose link expansion product with any
27 indication whatsoever that it was to operate as part of a group of Bose link expansion products.
28 This is consistent with the other evidence I have reviewed showing that a Bose link expansion

1 product would have never had any awareness that it was part of a group of Bose link expansion
2 products set to the same audio stream.

3 897. I also note that Dr. Schonfeld refers to the Bose link communication protocol
4 having a “play command that simultaneously plays audio in multiple zones,” but I have seen no
5 evidence of such a “play command” in the “Understanding Bose link” document cited by Dr.
6 Schonfeld. *See* BOSE_SUB-0000594-601. Moreover, as explained above, in a Bose link system,
7 each SA-2 or SA-3 amplifier in each room needs its own Bose link expansion controller, such as
8 the RC-18S Remote Control, RC-38S Remote Control, and Personal Music Center II, and such
9 controllers can only be set up to control a single room at a time by setting the “room code” of the
10 remote control to match the “room code” of the SA-2 or SA-3 Amplifier. *See* BOSE_SUB-
11 0000361-448 at 384-386; *see also* BOSE_SUB-0000594-601 at 595 (“Both the expansion product
12 and the remote must be configured to operate on the same room.”). Thus, contrary to Dr.
13 Schonfeld’s assertion, there is no way to send a “play command that simultaneously plays audio
14 in multiple zones” using the Bose link communication protocol.

15 898. Regardless, a POSITA would understand that the “instruction to operate in
16 accordance with” the selected “zone scene” requires an instruction that causes the selected “zone
17 scene” to become “invoked” such that the group of “zone players” that is “predefined” as part of
18 the selected “zone scene” becomes activated. However, any alleged “play command” would be
19 sent after a group of Bose link expansion products was set to the same audio stream and was
20 already activated for synchronous playback, as explained above.

21 **12. The Bose Lifestyle 50 System Did Not Meet Limitation 1.10**

22 899. Limitation 1.10 of claim 1 of the ’885 patent requires the “first zone player” to be
23 programmed with the capability for “based on the instruction, transitioning from operating in the
24 standalone mode to operating in accordance with the given one of the first and second predefined
25 groupings of zone players such that the first zone player is configured to coordinate with at least
26 one other zone player in the given one of the first and second predefined groupings of zone players
27 over a data network in order to output media in synchrony with output of media by the at least one
28 other zone player in the given one of the first and second predefined groupings of zone players.”

1 900. As an initial matter, it is not clear what Dr. Schonfeld is alleging to be the claimed
2 “first zone player,” “first and second predefined groupings of zone payers,” or “other zone player.”
3 See Schonfeld Op. Report at ¶¶700-701. In fact, with respect to limitation 1.10, Dr. Schonfeld
4 merely relies on his analysis for “previous claim elements” but, as explained above, his allegations
5 for the previous claim limitations are not clear. Thus, for these reasons alone, Dr. Schonfeld has
6 failed to prove that any system, let alone the Bose Lifestyle 50 System, discloses limitation 1.10.

7 901. Regardless, for at least the reasons below, neither the actual Bose Lifestyle 50
8 System nor Dr. Schonfeld’s alleged Bose Lifestyle 50 System discloses limitation 1.10.

9 Actual Bose Lifestyle 50 System

10 902. In my opinion, the actual Bose Lifestyle 50 System does not disclose limitation
11 1.10 for at least the following reasons.

12 903. First, as explained above, the evidence I have reviewed establishes that Lifestyle
13 players in the Bose Lifestyle 50 System did not have “zone scenes” capability, and for this reason
14 alone, a Lifestyle player in the Bose Lifestyle 50 System did not have the capability to use a
15 received “instruction to operate in accordance with a given one of the first and second zone scenes
16 respectively comprising a given one of the first and second predefined groupings of [Lifestyle
17 players]” as a basis for “transitioning from operating in the standalone mode to operating in
18 accordance with the given one of the first and second predefined groupings of [Lifestyle players]
19 such that the [Lifestyle player] is configured to coordinate with at least one other [Lifestyle player]
20 in the given one of the first and second predefined groupings of [Lifestyle players] over a data
21 network in order to output media in synchrony with output of media by the at least one other
22 [Lifestyle player] in the given one of the first and second predefined groupings of [Lifestyle
23 players].”

24 904. Second, even setting aside the other fundamental differences between a group of
25 Lifestyle players having a “shared source” of audio and a “zone scene,” the evidence I have
26 reviewed establishes that a Lifestyle player did not have the capability to “transition[] from
27 operating in [a] standalone mode to operating in accordance with” a “sync group” such that the
28 Lifestyle player would have been “configured to coordinate with at least one other [Lifestyle

1 player] over a data network in order to output media in synchrony with output of media by the at
2 least one other [Lifestyle player].” In fact, the evidence I have reviewed establishes a Lifestyle
3 player did not have the capability to “coordinate with at least one other [Lifestyle player] over a
4 data network” for any purpose, and as explained above, a Lifestyle player also did not have the
5 capability to change its configuration as it related to audio playback, nor did it have any awareness
6 that it was part of a group of Lifestyle players having a “shared source” of audio. That is because
7 the configuration of the multi-room interface was exclusively responsible for the simultaneous
8 playback of audio on multiple Lifestyle players.

9 905. More specifically, when a user set up a “shared source” for multiple Lifestyle
10 players in one of the ways described above, the evidence I have reviewed indicates that, after the
11 user selected the audio source, the Personal music center would transmit information to the
12 centralized multi-room interface, which would cause the multi-room interface to configure itself
13 to distribute the same audio from the same audio source to each of the rooms so that the same
14 audio could be played back simultaneously via the Lifestyle players. *See, e.g.* BOSE_SUB-
15 0000001-55 at 6 (“The Bose multi-room interface, with four independent audio outputs that allow
16 you to enjoy Bose sound throughout your home.”), 12 (illustrating a Bose Lifestyle 50 System
17 configuration with a CD player and an Acoustimass module connected the multi-room interface),
18 17 (illustrating various audio sources connected to multi-room interface via audio input cables),
19 19 (“When batteries are first installed in the music center; it sets up a radio-frequency link with
20 the closest multi-room interface.”), 44-45 (explaining how to use ROOM and HOUSE buttons of
21 the Personal music center to set up an audio source for one or more rooms connected to the multi-
22 room interface). In other words, a group of Lifestyle players having a “shared source” of audio
23 would merely playback the audio that they receive from the multi-room interface without any
24 coordination between the Lifestyle players. From the perspective of the Lifestyle players, the
25 evidence I have reviewed indicates that these players always operate independently of one another,
26 are not aware of other players, and have no knowledge that they have been selected to share a
27 source of audio.

28 906. Despite the clear absence of this functional capability from the Bose Lifestyle 50

1 System, Dr. Schonfeld opines in paragraphs 700-701 of his Opening Report that the Bose Lifestyle
2 50 System discloses limitation 1.10 and then merely states that “[a]s described in the previous
3 claim elements, a user may select a synchronization group for playback using the Player selector
4 box, and use the playback controls to cause Bose LifeStyle to operate as a synchronous playback
5 group.” *See* Schonfeld Op. Report at ¶¶ 700-701. I disagree. As an initial matter, I am not aware
6 of any “Player selector box” in the Bose Lifestyle 50 System. Moreover, even if Dr. Schonfeld’s
7 statement were true (which it is not for the reasons explained above), it fails to mention the
8 requirements of limitation 1.10 related to “coordination” between “zone players” “over a data
9 network.”

10 907. Thus, nothing in Dr. Schonfeld’s Opening Report alters my opinion that a Lifestyle
11 player did not have the functional capability required by limitation 1.10.

12 Dr. Schonfeld’s alleged Bose Lifestyle 50 System

13 908. In my opinion, Dr. Schonfeld’s alleged Bose Lifestyle 50 System does not disclose
14 limitation 1.10 for at least the following reasons.

15 909. First, as explained above, the evidence I have reviewed establishes that, in a Bose
16 link configuration of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment
17 system,” Lifestyle players did not have any “zone scenes” capability, and for this reason alone, a
18 Lifestyle player in the Bose Lifestyle 50 System did not have the capability to use a received
19 “instruction to operate in accordance with a given one of the first and second zone scenes
20 respectively comprising a given one of the first and second predefined groupings of [Lifestyle
21 players]” as a basis for “transitioning from operating in the standalone mode to operating in
22 accordance with the given one of the first and second predefined groupings of [Lifestyle players]
23 such that the [Lifestyle player] is configured to coordinate with at least one other [Lifestyle player]
24 in the given one of the first and second predefined groupings of [Lifestyle players] over a data
25 network in order to output media in synchrony with output of media by the at least one other
26 [Lifestyle player] in the given one of the first and second predefined groupings of [Lifestyle
27 players].”

28 910. Second, the evidence I have reviewed establishes that, in a Bose link configuration

1 of a Bose “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system,” a Lifestyle
2 player did not have the capability to “transition[] from operating in [a] standalone mode to
3 operating in accordance with” a “sync group” such that the Lifestyle player would have been
4 “configured to coordinate with at least one other [Lifestyle player] over a data network in order to
5 output media in synchrony with output of media by the at least one other [Lifestyle player].” In
6 fact, the evidence I have reviewed establishes a Lifestyle player did not have the capability to
7 “coordinate with at least one other [Lifestyle player] over a data network” for any purpose, and as
8 explained above, a Lifestyle player also did not have the capability to change its configuration as
9 it related to audio playback, nor did it have any awareness that it was part of a group of Lifestyle
10 players having a “shared source” of audio.

11 911. I have seen no evidence that Lifestyle players in a Bose link configuration of a Bose
12 “Lifestyle 18 series II, 28 series II, 38 or 48 home entertainment system” can coordinate with each
13 other in order to output audio in synchrony. While the Bose link communication protocol appears
14 to have facilitated certain communications between a Bose link expansion remote and a Bose link
15 enabled media center, and between a Bose link enabled media center and a Bose link expansion
16 product (e.g., an SA-2 or SA-3 amplifier), I have not seen any evidence that the Bose link
17 communication protocol enabled communication between multiple Bose link expansion products,
18 let alone “coordination” between Bose link expansion products over a “data network” in order to
19 output audio in synchrony. BOSE_SUB-0000594-601 at 595-596. To the contrary, even when
20 Bose link expansion products are daisy chained together via Bose link input and output connectors,
21 and such expansion products are set to the same stream of audio (stream 1 or stream 2), the
22 evidence I have reviewed indicates that audio would merely be passed through from one Bose link
23 expansion product to the next without any coordination between the expansion products in order
24 to output audio in synchrony. BOSE_SUB-0000361-448 at 368 (“Bose® link INPUT/OUTPUT:
25 Nine-pin DIN connectors used for connecting the amplifier to a Bose® link network. Input signals
26 are passed through to the output connector to allow daisy chaining.”).

27 **13. Bose Lifestyle 50 System as Modified by a POSITA**

28 912. In his Opening Report, Dr. Schonfeld opines that claim 1 of the ’885 Patent is

1 rendered obvious by the Bose Lifestyle 50 System based on the knowledge of a POSITA in 2005-
2 06. *See* Schonfeld Op. Report at ¶¶ 657-658, 681-682. I disagree – in my opinion, claim 1 of
3 the '885 Patent is not rendered obvious by the Bose Lifestyle 50 System based on the knowledge
4 of a POSITA, and Dr. Schonfeld's opinion to the contrary is flawed for several reasons.

5 913. First, Dr. Schonfeld is only relying on the additional knowledge of a POSITA to
6 make up for the deficiencies of the Bose Lifestyle 50 System with respect to limitations 1.7-1.8,
7 but as explained above, the Bose Lifestyle 50 System did not meet several other limitations of
8 claim 1, including limitations 1.0-1.6 and 1.9-1.10. Thus, even if one were to accept Dr.
9 Schonfeld's opinions regarding the combination of the Bose Lifestyle 50 System based on the
10 knowledge of a POSITA, claim 1 still would not be rendered obvious by that combination.

11 914. Second, even if Dr. Schonfeld's proposed modifications to the Bose Lifestyle 50
12 System were made, the hypothetical system resulting from these modifications would still not meet
13 all of the limitations of claim 1 of the '885 Patent.

14 915. For instance, with respect to limitation 1.7, Dr. Schonfeld's proposed modification
15 is to "add overlapping groups." However, limitation 1.7 requires much more than just
16 "overlapping groups" – it requires the capability to receive "indications" that the "first zone player"
17 "has been added" to two different "zone scenes" comprising customized, pre-saved groups of
18 "zone players" that are then both in existence at the same time and available to be "selected for
19 invocation" by a user so that one of the "zone scenes" can later be "invoked" on demand. Thus,
20 even if one were to modify the Bose Lifestyle 50 System to "add overlapping groups" as Dr.
21 Schonfeld proposes, this still would not result in a hypothetical system having the "zone scenes"
22 capability that is required by limitation 1.7 along with the other surrounding claim language.

23 916. Further, with respect to limitation 1.8, Dr. Schonfeld's proposed modification is
24 to allow a Lifestyle player to "remain in standalone mode as claimed" when the Lifestyle player
25 is "added to a group." However, what limitation 1.8 actually requires is for the "first zone
26 player" to "continu[e] to operate in the standalone mode" after being added to a "zone scene,"
27 and as explained above, a group of Lifestyle players having a "shared source" in the Bose
28 Lifestyle 50 System is not a "zone scene." Thus, even if one were to modify the Bose Lifestyle

1 50 System to allow a Lifestyle player to “remain in standalone mode as claimed” when the
2 Lifestyle player is “added to a group” as Dr. Schonfeld proposes, this still would not result in a
3 hypothetical system having capability that is required by limitation 1.8.

4 917. Third, Dr. Schonfeld has failed to provide any explanation as to how the Bose Lifestyle
5 50 System would have actually been modified based on the knowledge of a POSITA – let alone how
6 that alleged modification would have achieved the claimed invention. Instead, Dr. Schonfeld merely
7 concludes that it would have been “obvious to select allowing overlapping group membership when
8 implementing speaker groups” because it was “desirable” and “attractive.” *Id.* at ¶¶ 657-658. Just
9 because something is “desirable” and “attractive” doesn’t necessarily mean that it is obvious to
10 implement or even possible to implement into an existing system.

11 918. Fourth, with respect to limitation 1.8, Dr. Schonfeld’s entire obviousness assertion
12 is based on an allegation that there “are a limited number of obvious design options” including the
13 claimed functionality. Schonfeld Op. Report at ¶¶ 681-682. However, the only support Dr.
14 Schonfeld cited for this position is disclosure in the ‘407 Provisional that is not related to limitation
15 1.8. *Id.* (citing ‘407 Provisional at Appendix A, p.4). Specifically, as explained below, contrary
16 to Dr. Schonfeld’s assertion, the cited disclosure describes potential options for how to handle the
17 playback of media when a previously set up “zone scene” is invoked (referred to as “started” in
18 this disclosure), which relates to limitation 1.10 – not limitation 1.8, which recites the functionality
19 of the “first zone player” after being added to two “zone scenes” that have been set up but have
20 not yet been “invoked.” *Supra* Section XIV. Thus, Dr. Schonfeld has not provided any support
21 for his conclusion that there “are a limited number of obvious design options” related to limitation
22 1.8.²³

23 919. Moreover, even if the disclosure Dr. Schonfeld cited was related to limitation 1.8
24 (it is not), the fact that the inventor of the ’885 Patent listed several options for implementing
25 certain functionality does not necessarily mean that those are the only options or that they are

26 ²³ Dr. Schonfeld’s own recognition that the three disclosed “options” the ‘407 Provisional section entitled
27 “What happens to the Music that’s already playing when a Zone Scene is Started” did not include the
28 claimed functionality of “continuing to operate in standalone mode” only further demonstrates that the
section he is relying on is not relevant to limitation 1.8.

1 “obvious design options.” In fact, it appears that the inventor was still investigating other options
2 as indicated by “TBD.” 407 Provisional at Appendix A, p.4.

3 920. Further yet, I disagree with Dr. Schonfeld’s suggestion that this would have simply
4 been a matter of choosing to keep an added group member in “standalone mode” from a list of
5 “obvious design options” – the Bose Lifestyle 50 System was employing a distinctly different type
6 of grouping technology that only allowed a user to create temporary, ad-hoc groups having a
7 “shared source” that were automatically activated at the time they were created, and keeping a
8 group member in “standalone mode” after it has been added to such a group would have been
9 directly contrary to the principle of operation of that grouping technology. For this reason, a
10 POSITA in 2005-06 would not have even considered keeping an added group member in
11 “standalone mode” as a possible option, nor would a POSITA in 2005-06 have been motivated to
12 change the Bose Lifestyle 50 System to implement this change, which would require a completely
13 different grouping technology.

14 921. Thus, for these reasons, it is my opinion that claim 1 of the ’885 Patent is not
15 rendered obvious by Sonos’s 2005 system based on the knowledge of a POSITA.

16 **14. Bose Lifestyle 50 System Combined with Nourse**

17 922. In his Opening Report, Dr. Schonfeld opines that claim 1 of the ’885 Patent is
18 rendered obvious by the Bose Lifestyle 50 System in combination with Nourse. *See* Schonfeld
19 Op. Report at ¶¶ 6, 621, 659. I disagree – in my opinion, claim 1 of the ’885 Patent is not rendered
20 obvious by the Bose Lifestyle 50 System in combination with Nourse, and Dr. Schonfeld’s opinion
21 to the contrary is flawed for several reasons.

22 923. First, I understand that Nourse was cited on the face of the ’885 Patent. ’885 Patent
23 at 4. As such, I understand that Nourse was considered by the USPTO during prosecution of the
24 ’885 Patent, and the USPTO allowed the ’885 Patent (including claim 1) to issue over Nourse.
25 Since the USPTO already considered Nourse, I understand that Dr. Schonfeld and Google have
26 the added burden of overcoming the deference that is due to a qualified government agency, such
27 as the USPTO, that is presumed to have properly done its job based on its expertise in interpreting
28 references, its understanding of the level of ordinary skill in the art, and its duty to issue only valid

1 patents. However, it is my opinion that Dr. Schonfeld failed to satisfy this added burden.

2 924. Second, Dr. Schonfeld is only relying on Nourse to make up for the deficiencies of
3 the Bose Lifestyle 50 System with respect to limitation 1.7, but as explained above, the Bose
4 Lifestyle 50 System did not meet several other limitations of claim 1, including limitations 1.0-1.6
5 and 1.8-1.10. Thus, even if one were to accept Dr. Schonfeld's opinions regarding the combination
6 of the Bose Lifestyle 50 System with Nourse, claim 1 still would not be rendered obvious by that
7 combination.

8 925. Third, as explained above, Nourse fails to disclose or suggest a "first zone player"
9 that is programmed with the functional capability required by limitation 1.7 for various reasons.
10 *Supra* Section XII.A.10. Because Nourse fails to disclose or suggest a "first zone player" that is
11 programmed with the functional capability required by limitation 1.7, even if a POSITA in 2005-
12 06 were to modify the Bose Lifestyle 50 System to incorporate the teachings of Nourse, it is my
13 opinion that the Lifestyle players in such a modified Bose Lifestyle 50 System still would not have
14 the required capability to "receiv[e], from the network device over the data network, a second
15 indication that the [Lifestyle player] has been added to a second zone scene comprising a second
16 predefined grouping of zone players including at least the [Lifestyle player] and [another Lifestyle
17 player] that are to be configured for synchronous playback of media when the second zone scene
18 is invoked" – let alone the other capability that was absent from the Lifestyle players in the Bose
19 Lifestyle 50 System.

20 926. Fourth, Dr. Schonfeld has failed to provide any explanation as to how the Bose
21 Lifestyle 50 System would have actually been modified to combine it with the identified functionality
22 of Nourse's "centralized speaker system" – let alone how that alleged combination would have
23 achieved the claimed invention.

24 927. Fifth, I fail to see any evidence of an apparent reason why a POSITA in 2005-06
25 would have been motivated to modify the Bose Lifestyle 50 System to combine it with the
26 identified functionality of Nourse's "centralized speaker system." For instance, I fail to see anything
27 in the materials for the Bose Lifestyle 50 System or the teachings of Nourse, or any other evidence of
28 a recognized need or problem in Bose's field of endeavor, that would have motivated a POSITA in

1 2005-06 to modify the Bose Lifestyle 50 System to incorporate the identified functionality of
2 Nourse's "centralized speaker system" – which does not meet limitation 1.7 in any event.

3 928. In his Opening Report, Dr. Schonfeld says that a POSITA would have been
4 motivated to combine the Bose Lifestyle 50 System with Nourse because it is "analogous to the
5 '885 patent" and "reasonably pertinent to the problem to be solved by the '885 patent"
6 Schonfeld Op. Report at ¶ 659. However, these generic statements fail to establish why a POSITA
7 in 2005-06 would have been motivated to make any modification to the Bose Lifestyle 50 System
8 at all – let alone why a POSITA in 2005-06 would have been motivated to combine the Bose
9 Lifestyle 50 System system with Nourse in the specific manner proposed by Dr. Schonfeld.

10 929. In his Opening Report, Dr. Schonfeld also states as follows:

11 Nourse teaches additional means for improving the user experience by allowing a
12 user to add a playback device to multiple groups. Nourse at 3:57-4:5. It would have
13 been desirable to allow a user to have a particular zone player join multiple groups
14 (e.g., the kitchen and patio could be grouped for outside entertainment, and the
15 kitchen and living room could be grouped for inside entertainment). Having a
16 speaker join multiple groups would increase the number of customized
17 combinations a user could configure in their home, as the Bose Lifestyle recognizes
18 as an important feature.

19 Schonfeld Op. Report at ¶ 659. Dr. Schonfeld fails to support this statement that "[i]t would have
20 been desirable to allow a user to have a particular zone player join multiple groups" with any
21 evidence, but even if a POSITA in 2005-06 were to have recognized that this functionality was
22 "desirable," I fail to see any evidence that this recognition would have motivated such a POSITA
23 to modify the Bose Lifestyle 50 System to incorporate the identified functionality of Nourse.
24 Moreover, even if a POSITA in 2005-06 were to have recognized that it was "desirable" to modify
25 the Bose Lifestyle 50 System to "allow a user to have a particular zone player join multiple groups"
26 as Dr. Schonfeld contends, this still would not have motivated a POSITA to modify the Bose
27 Lifestyle 50 System in the specific ways that would have been required in order to achieve the
28 claimed invention.

930. I have also seen evidence of affirmative reasons why a POSITA would not have
been motivated to combine the Bose Lifestyle 50 System with the identified functionality of
Nourse. For instance, Nourse is directed to an entirely different system architecture than the Bose

1 Lifestyle 50 System that requires an “central station” with a “collocated” amplifier. *See* Nourse at
2 Abstract. Given the significant differences in the system architectures, a POSITA would have
3 been dissuaded from modifying the Bose Lifestyle 50 System to combine it with the identified
4 functionality of Nourse since adding Nourse’s “group” functionality would have required adding
5 a “central station” with a “collocated” amplifier to the Bose Lifestyle 50 System. In fact, such a
6 modification would have altered the principle of operation of the Bose Lifestyle 50 System.

7 931. For instance, the Personal music center and multi-room interface of the Bose
8 Lifestyle 50 System, which are used to set up a “shared source” of audio for multiple Lifestyle
9 players, communicate using a proprietary radio frequency communication protocol that was
10 specifically developed for the Bose Lifestyle 50 System and that is “not compatible” with protocols
11 used in other Bose systems, much less any third-party system like the one in Nourse. *See*
12 BOSE_SUB-0000663-683 at 666. As such, a POSITA would have been dissuaded from
13 modifying the Bose Lifestyle 50 System to combine it with the identified functionality of Nourse
14 because, to the extent it was even possible, it would have required wholesale changes to the Bose
15 Lifestyle 50 System.

16 932. Finally, because there is no evidence that a POSITA in 2005-06 would have been
17 motivated to modify the Bose Lifestyle 50 System to combine it with the identified functionality
18 of Nourse, it appears that Dr. Schonfeld has used the asserted claims as a roadmap to reach his
19 conclusion that a POSITA would have found the claimed invention obvious based on the Bose
20 Lifestyle 50 System in combination with Nourse, which I understand to be improper. *Compare*
21 Schonfeld Op. Report, ¶659 (“It would have been desirable to allow a user to have a particular
22 zone player join multiple groups (e.g., the kitchen and patio could be grouped for outside
23 entertainment, and the kitchen and living room could be grouped for inside entertainment). Having
24 a speaker join multiple groups would increase the number of customized combinations a user could
25 configure in their home, as the Bose Lifestyle 50 System recognizes as an important feature.”) *with*
26 ’885 Patent, 8:62-67 (“Expanding this idea further, a Zone Scene can be set to create multiple sets
27 of linked zones. For example, a scene creates 3 separate groups of zones, the downstairs zones
28 would be linked together, the upstairs zones would be linked together in their own group, and the

1 outside zones (in this case the patio) would move into a group of its own.”), 2:18-24 (“There is a
2 need for dynamic control of the audio players as a group. With a minimum manipulation, the audio
3 players may be readily grouped. In a traditional multi-zone audio system, the audio players have
4 to be adjusted one at a time, resulting in an inconvenient and non-homogenous audio
5 environment.”).

6 933. Thus, for these reasons, it is my opinion that claim 1 of the ’885 Patent is not
7 rendered obvious by the Bose Lifestyle 50 System in combination with Nourse.

8 **15. Bose Lifestyle 50 System Combined with Millington**

9 934. In his Opening Report, Dr. Schonfeld opines that claim 1 of the ’885 Patent is
10 rendered obvious by the Bose Lifestyle 50 System in combination with Millington. *See* Schonfeld
11 Op. Report at ¶¶ 6, 621, 671. I disagree – in my opinion, claim 1 of the ’885 Patent is not rendered
12 obvious by the Bose Lifestyle 50 System in combination with Millington, and Dr. Schonfeld’s
13 opinion to the contrary is flawed for several reasons.

14 935. First, I understand that Millington was cited on the face of the ’885 Patent. ’885
15 Patent at 5 (citing to U.S. Pat. No. 8,234,395, which is a U.S. counterpart to the Millington
16 Canadian patent relied upon by Dr. Schonfeld). As such, I understand that Millington was
17 considered by the USPTO during prosecution of the ’885 Patent, and the USPTO allowed the ’885
18 Patent (including claim 1) to issue over Millington. Since the USPTO already considered
19 Millington, I understand that Dr. Schonfeld and Google have the added burden of overcoming the
20 deference that is due to a qualified government agency, such as the USPTO, that is presumed to
21 have properly done its job based on its expertise in interpreting references, its understanding of the
22 level of ordinary skill in the art, and its duty to issue only valid patents. However, it is my opinion
23 that Dr. Schonfeld failed to satisfy this added burden.

24 936. Second, Dr. Schonfeld is only relying on Millington to make up for the deficiencies
25 of Sonos’s 2005 system with respect to limitations 1.7 and 1.8, but as explained above, the Bose
26 Lifestyle 50 System did not meet several other limitations of claim 1, including limitations 1.0-
27 1.6, 1.9, and 1.10. Thus, even if one were to accept Dr. Schonfeld’s opinions regarding the
28 combination of the Bose Lifestyle 50 System with Millington, claim 1 still would not be rendered

1 obvious by that combination.

2 937. Third, as explained above, Millington fails to disclose or suggest a “first zone
3 player” that is programmed with the functional capability required by limitations 1.7 and 1.8 for
4 various reasons. *Supra* Section XII.A.12. Because Millington does not disclose or suggest a “first
5 zone player” that is programmed with the functional capability required by limitations 1.7 and 1.8,
6 even if a POSITA in 2005-06 were to modify the Bose Lifestyle 50 System to incorporate the
7 teachings of Millington, it is my opinion that the Lifestyle players in such a modified Bose
8 Lifestyle 50 System still would not have the capability required by limitations 1.7-1.8 – let alone
9 the other capability that was absent from the Lifestyle players in the Bose Lifestyle 50 System.

10 938. Fourth, Dr. Schonfeld has failed to provide any explanation as to how the centralized
11 Bose Lifestyle 50 System would have actually been modified to combine it with the identified
12 functionality of Millington’s networked audio system – let alone how that alleged combination would
13 have achieved the claimed invention.

14 939. Fifth, I fail to see any evidence of an apparent reason why a POSITA in 2005-06
15 would have been motivated to modify the centralized Bose Lifestyle 50 System to combine it with
16 the identified functionality of Millington’s networked audio system. For instance, I fail to see
17 anything in the materials for the Bose Lifestyle 50 System or the teachings of Millington, or any other
18 evidence of a recognized need or problem in Bose’s field of endeavor, that would have motivated a
19 POSITA in 2005-06 to modify the centralized Bose Lifestyle 50 System to incorporate the identified
20 functionality of Millington’s network audio system – which does not meet limitations 1.7 and 1.8 in
21 any event.

22 940. In his Opening Report, Dr. Schonfeld says that a POSITA would have been
23 motivated to combine the Bose Lifestyle 50 System with Millington for the following reasons:

24 A person of skill in the art would have been motivated to combine Millington with
25 the Bose LifeStyle because Mr. Millington worked on Sonos products that are in
26 the same field of endeavor as the Bose LifeStyle, and therefore it would have been
27 an obvious choice to look to for guidance about potential modifications to that
28 system. Mr. Millington’s patents also described aspects of the Sonos System or
aspects related to how those systems practice group synchronization and therefore
a POSITA would have looked to Millington to understand the Sonos System or its
competitors, like Bose LifeStyle. Millington was also assigned to Sonos and was

1 filed in the same timeframe as the Sonos System was released.

2 Schonfeld Op. Report at ¶ 671.

3 941. However, these generic statements fail to establish why a POSITA in 2005-06
4 would have been motivated to make any modification to the Bose Lifestyle 50 System at all – let
5 alone why a POSITA in 2005-06 would have been motivated to combine the Bose Lifestyle 50
6 System with Millington in the specific manner proposed by Dr. Schonfeld. Moreover, some of
7 these statements do not appear to make sense and/or are not relevant to combining the Bose
8 Lifestyle 50 System with Millington. For instance, it is unclear why a POSITA “would have looked
9 to Millington to understand the ... Bose LifeStyle” because Millington does not describe the Bose
10 LifeStyle system. *Id.* As another example, that “Millington was also assigned to Sonos and was
11 filed in the same timeframe as the Sonos System was released” has no bearing on whether a
12 POSTA would have been motivated to combine the Bose Lifestyle 50 System with Millington.

13 942. In his Opening Report, Dr. Schonfeld also states as follows:

14 [A] person of skill in the art would have been motivated to combine Bose LifeStyle
15 with Millington. They are both in the same field of endeavor—control of speaker
16 systems, speaker groups, synchronous playback of speakers, and home audio
systems—and they both describe the same features and devices (e.g., “zone
players”) in the same language.

17 Schonfeld Op. Report at ¶683; *see also id.* at 685.

18 943. However, this statement appears to be carried over from the Sonos prior art section
19 of Dr. Schonfeld’s Opening Report and does not apply to the alleged combination of the Bose
20 Lifestyle 50 System with Millington. The Bose Lifestyle 50 System and Millington do not “describe
21 the same features and devices (e.g., “zone players”) in the same language.” *Id.*

22 944. Moreover, I have also seen evidence of affirmative reasons why a POSITA would
23 not have been motivated to combine the Bose Lifestyle 50 System with the identified functionality
24 of Millington. For instance, as explained above, Millington discloses a “network audio system”
25 that includes “zone players” that are capable of being added to a “synchrony group” comprising a
26 set of “zone players” that are configured to “play the same audio program synchronously” by
27 coordinating with one another over a data network. *Supra* Section XII.A.12. In contrast, the Bose
28 Lifestyle 50 System was a conventional centralized audio system with Lifestyle players that were

1 hardwired via audio cable to a centralized multi-room interface and did not have the capability to
2 coordinate with one another over a data network for synchronous audio playback. *See*
3 BOSE_SUB-0000001-55 at 11-12. Given these fundamental differences between the centralized
4 Bose Lifestyle 50 System and Millington's network audio system it is my opinion that a POSITA
5 would have been dissuaded from modifying Sonos's 2005 system to combine it with the identified
6 functionality of Millington's network audio system.

7 945. Along similar lines, Dr. Schonfeld's opinion that a POSITA would have been
8 motivated to modify the Bose Lifestyle 50 System to combine it with the identified functionality
9 of Millington's networked audio system is contradicted by the fact that modification would have
10 fundamentally altered the principles of operation of the Bose Lifestyle 50 System at least with
11 respect to the fact that the Bose Lifestyle 50 System was a centralized system built around a
12 centralized multi-room interface whereas Millington was a decentralized system built around
13 "zone players" that had data networking and data processing capability.

14 946. Further, the Personal music center and multi-room interface of the Bose Lifestyle
15 50 System, which are used to set up a "shared source" of audio for multiple Lifestyle players,
16 communicate using a proprietary radio frequency communication protocol that was specifically
17 developed for the Bose Lifestyle 50 System and that is "not compatible" with protocols used in
18 other Bose systems, much less any third-party system like the one in Millington. *See* BOSE_SUB-
19 0000663-683 at 666. As such, a POSITA would have been dissuaded from modifying the Bose
20 Lifestyle 50 System to combine it with the identified functionality of Millington because, to the
21 extent it was even possible, it would have required wholesale changes to the Bose Lifestyle 50
22 System.

23 947. Finally, because there is no evidence that a POSITA in 2005-06 would have been
24 motivated to modify the Bose Lifestyle 50 System to combine it with the identified functionality
25 of Millington, it appears that Dr. Schonfeld has used the asserted claims as a roadmap to reach his
26 conclusion that a POSITA would have found the claimed invention obvious based on the Bose
27 Lifestyle 50 System in combination with Millington, which I understand to be improper.

28 948. Thus, for these reasons, it is my opinion that claim 1 of the '885 Patent is not

rendered obvious by the Bose Lifestyle 50 System in combination with Millington.

16. Bose Lifestyle 50 System Combined with Rajapakse

949. In his Opening Report, Dr. Schonfeld opines that claim 1 of the '885 Patent is rendered obvious by the Bose Lifestyle 50 System in combination with Rajapakse. *See* Schonfeld Op. Report at ¶¶ 621, 660-670, 689-696. I disagree – in my opinion, claim 1 of the '885 Patent is not rendered obvious by the Bose Lifestyle 50 System in combination with Rajapakse, and Dr. Schonfeld's opinion to the contrary is flawed for several reasons.

950. First, as explained above, Dr. Schonfeld has failed to establish that Rajapakse qualifies as prior art to claim 1 of the '885 Patent. *Supra* Section XII.A.11.

951. Second, not only was Rajapakse cited on the face of several other Sonos patents as acknowledged by Dr. Schonfeld (Schonfeld Op. Report at ¶ 555), Rajapakse was also cited on the face of the '885 Patent. '885 Patent at 5. As such, I understand that Rajapakse was considered by the USPTO during prosecution of the '885 Patent, and the USPTO allowed the '885 Patent (including claim 1) to issue over Rajapakse. Since the USPTO already considered Rajapakse, I understand that Dr. Schonfeld and Google have the added burden of overcoming the deference that is due to a qualified government agency, such as the USPTO, that is presumed to have properly done its job based on its expertise in interpreting references, its understanding of the level of ordinary skill in the art, and its duty to issue only valid patents. However, it is my opinion that Dr. Schonfeld failed to satisfy this added burden.

952. Third, Dr. Schonfeld is only relying on Rajapakse to make up for the deficiencies of the Bose Lifestyle 50 System with respect to limitations 1.7-1.8, but as explained above, the Bose Lifestyle 50 System did not meet several other limitations of claim 1, including limitations 1.0-1.6, 1.9, and 1.10. Thus, even if one were to accept Dr. Schonfeld's opinions regarding the combination of the Bose Lifestyle 50 System with Rajapakse, claim 1 still would not be rendered obvious by that combination.

953. Fourth, as explained above, Rajapakse fails to disclose or suggest a "first zone player" that is programmed with the functional capability required by limitations 1.7-1.8 for various reasons. *Supra* Section XII.A.11. Because Rajapakse fails to disclose or suggest a "first

1 zone player” that is programmed with the functional capability required by limitations 1.7-1.8, even
2 if a POSITA in 2005-06 were to modify the Bose Lifestyle 50 System to incorporate the teachings
3 of Rajapakse, it is my opinion that the Lifestyle players in such a modified Bose Lifestyle 50
4 System still would not have the capability required by limitations 1.7-1.8 – let alone the other
5 capability that was absent from the Lifestyle players.

6 954. Fifth, Dr. Schonfeld has failed to provide any explanation as to how the Bose Lifestyle
7 50 System would have actually been modified to combine it with the identified functionality of
8 Rajapakse – let alone how that alleged combination would have achieved the claimed invention.

9 955. Sixth, even if Rajapakse did disclose limitations 1.7-1.8 (which it does not), I fail
10 to see any evidence of an apparent reason why a POSITA in 2005-06 would have been motivated
11 to modify Bose Lifestyle 50 System to combine it with the identified functionality of Rajapakse’s
12 system. For instance, I fail to see anything in the materials for Bose Lifestyle 50 System or the
13 teachings of Rajapakse, or any other evidence of a recognized need or problem in Bose’s field of
14 endeavor, that would have motivated a POSITA in 2005-06 to modify Bose Lifestyle 50 System to
15 incorporate the identified functionality of Rajapakse’s system – which does not meet limitations 1.7-
16 1.8 in any event.

17 956. In his Opening Report, Dr. Schonfeld says that a POSITA would have been
18 motivated to combine the Bose Lifestyle 50 System with Rajapakse for the sole reason that
19 “Rajapakse was cited by many Sonos patents regarding speaker grouping, including patents from
20 the same family as the ’885 patent” as well as third-party patents, including Google’s own patents,
21 that are “closely related to the ’885 patent.” Schonfeld Op. Report at ¶ 660. However, these
22 generic statements fail to establish why a POSITA in 2005-06 would have been motivated to make
23 any modification to the Bose Lifestyle 50 System at all – let alone why a POSITA in 2005-06
24 would have been motivated to combine the Bose Lifestyle 50 System with Rajapakse in the
25 specific manner proposed by Dr. Schonfeld.

26 957. I have also seen evidence of affirmative reasons why a POSITA would not have
27 been motivated to combine the Bose Lifestyle 50 System with the identified functionality of
28 Rajapakse. For instance, Rajapakse is directed to an entirely different system architecture than the

1 Bose Lifestyle 50 System that requires a number of different components to facilitate its “zone”
2 functionality, including a “bridge renderer 205,” a “distribution server 204,” and a “zone manager
3 210,” among others. *See* Rajapakse at FIGs. 2-5; *see also id.* at 11:7-18. Given the significant
4 differences in the system architectures, a POSITA would have been dissuaded from modifying the
5 Bose Lifestyle 50 System to combine it with the identified functionality of Rajapakse since adding
6 Rajapakse’s “zone” would have required adding these additional components to the Bose Lifestyle
7 50 System. In fact, such a modification would have altered the principle of operation of the Bose
8 Lifestyle 50 System.

9 958. As another example, the Personal music center and multi-room interface of the
10 Bose Lifestyle 50 System, which are used to set up a “shared source” of audio for multiple Lifestyle
11 players, communicate using a proprietary radio frequency communication protocol that was
12 specifically developed for the Bose Lifestyle 50 System and that is “not compatible” with protocols
13 used in other Bose systems, much less any third-party system like the one in Rajapakse. *See*
14 BOSE_SUB-0000663-683 at 666. As such, a POSITA would have been dissuaded from
15 modifying the Bose Lifestyle 50 System to combine it with the identified functionality of
16 Rajapakse because, to the extent it was even possible, adding Rajapakse’s “zone” functionality
17 would have required wholesale changes to the Bose Lifestyle 50 System in order to enable the
18 Personal music center and/or multi-room interface of the Bose Lifestyle 50 System to
19 communicate with the additional components from Rajapakse that are required to facilitate
20 Rajapakse’s “zone” functionality.

21 959. Finally, because there is no evidence that a POSITA in 2005-06 would have been
22 motivated to modify the Bose Lifestyle 50 System to combine it with the identified functionality
23 of Rajapakse, it appears that Dr. Schonfeld has used the asserted claims as a roadmap to reach his
24 conclusion that a POSITA would have found the claimed invention obvious based on the Bose
25 Lifestyle 50 System in combination with Rajapakse, which I understand to be improper. *See*
26 Schonfeld Op. Report, ¶ 555 (“Rajapakse was cited by many Sonos patents regarding speaker
27 grouping, including patents from the same family as the ’885 patent, indicating that persons of
28 skill in the art recognized that Rajapakse was highly relevant to the claimed features.”).

1 960. Thus, for these reasons, it is my opinion that claim 1 of the '885 Patent is not
2 rendered obvious by the Bose Lifestyle 50 System in combination with Rajapakse.

3 **17. Summary**

4 961. As discussed above, there are a number of different limitations of claim 1 of the
5 '885 Patent that are neither disclosed by the Bose Lifestyle 50 System nor rendered obvious by the
6 Bose Lifestyle 50 System either alone or in combination with any one of Nourse, Millington, or
7 Rajapakse. Any one of these claim limitations serves as a separate basis for my opinion that claim
8 1 of the '885 Patent is not rendered obvious by the Bose Lifestyle 50 System either alone or in
9 combination with any one of Nourse, Millington, or Rajapakse, and when taken collectively, these
10 claim limitations provide even further support for my opinion that claim 1 of the '885 Patent is not
11 rendered obvious by the Bose Lifestyle 50 System either alone or in combination with any one of
12 Nourse, Millington, or Rajapakse.

13 962. Further, I note that Dr. Schonfeld appears to have only performed his obviousness
14 analysis for claim 1 of the '885 Patent on a limitation-by-limitation basis, and has not performed
15 any analysis or offered any opinions as to whether claim 1 of the '885 Patent as a whole would
16 have been obviousness, which I understand to be improper.

17 963. Further yet, I note that Dr. Schonfeld has only offered obviousness opinions with
18 respect to the Bose Lifestyle 50 System as combined with one other reference, and has not
19 performed any analysis or offered any opinions as to whether a POSITA in 2005-06 would have
20 been motivated to modify and combine the Bose Lifestyle 50 System with multiple different
21 references.

22 964. Accordingly, for all of the reasons explained above, it is my opinion that claim 1 of
23 the '885 Patent is not rendered obvious by the Bose Lifestyle 50 System either alone or in
24 combination with any one of Nourse, Millington, or Rajapakse.

25 **XIII. SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS**

26 965. Dr. Schonfeld opines that he “has not seen any ‘secondary considerations’ that may
27 be used to demonstrate non-obviousness.” Schonfeld Op. Report at ¶ 736. I disagree.

28 966. Based on my review of Dr. Schonfeld’s report and Sonos’s Response to Google’s

1 my opening report.

2 1086. I have also reviewed Sonos's Technology Tutorial that provides an overview of the
3 '885 Patent, which I understand was submitted to the court in February 2022. I incorporate by
4 reference herein Sonos's Technology Tutorial and expressly reserve the right to use the
5 Technology Tutorial in whole or in part as a demonstrative to assist in my testimony.

6 **XVIII. RESERVATION OF RIGHT**

7 1087. I reserve the right to further expound on my opinions regarding the validity of claim
8 1 of the '885 Patent in subsequent declarations, reports, and/or at trial.

9
10
11 Dated: July 27, 2022


By: _____
Kevin C. Almeroth